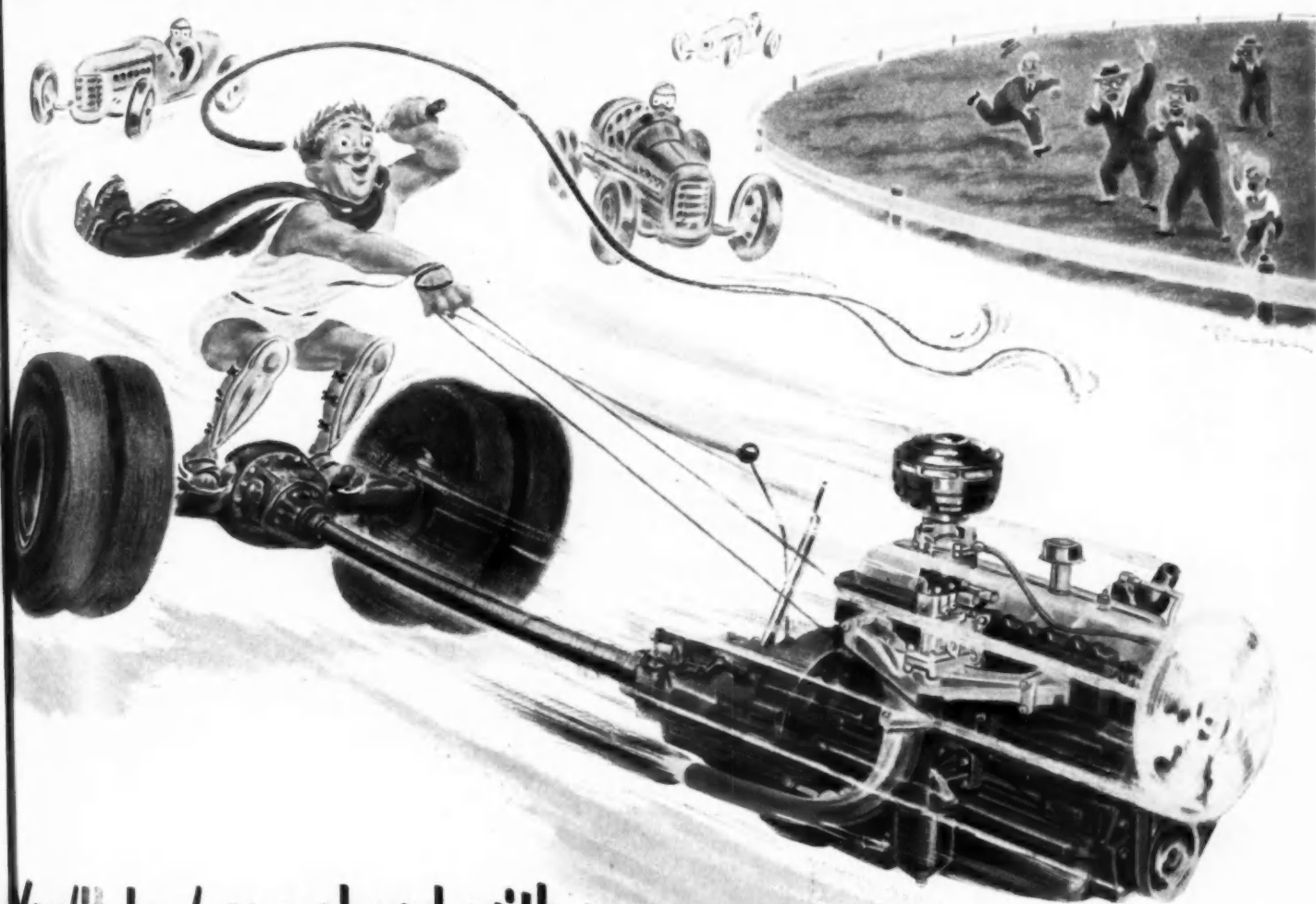


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COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR TRUCK AND BUS FLEET OPERATORS



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COMMERCIAL CAR JOURNAL, May, 1952

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EDITORIAL CONTENTS

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Rebirth of a Truck—Army Style	51
Army reclaims war-damaged vehicles on a fantastic scale . . . by Len Westrate	
PM Lanes Streamline Bus Maintenance	54
Pacific Electric Railway "builds in" maintenance lanes to speed work . . . by George F. Squires	
The Willett Company's Mobile Service Truck	57
1. Saves truck mileage, 2. Saves driver time, 3. Eliminates reloading . . . by A. Walter Neumann	
Trailer Tricks Save Time, Weight, Money	58
Four fleets show their hands in trailer rebuilding operations . . .	
Used Oil Analysis Guides Fleet PM Practices	62
Faber laboratory service helps to extend mileage between overhauls . . . by M. K. Simkins	
GMC Introduces 302 Engine, New Diesels	66
145 hp engine features 7.3 to 1 CR, slower piston speed, improved breathing	
More Miles for Your Battery Dollar	69
Care in selection, service, driving pay off in longer life . . . by L. E. Wells	
87 Fleets Win CCJ Maintenance Awards	70
CCJ announces winners of Board of Experts awards for the year	
LP Gas with a Southern Accent	72
Propane power is on the upswing down South. Fleets report good results	

FEATURETTES

Hydraulic Hightower Replaces Ladders, Climbers	88
Brake Clinic Begins National Tour	90
Bus Men Meet in St. Louis	92

DEPARTMENTS

Conference Corner	6
At Your Service	10
The Overload	20
Washington Runaround	23
Detroit Dispatch	27
CCJ News Reports	31
The Bulletin Board	37
Laugh It Off	41
Shop Hints	64
CCJ Board of Experts Survey	67
Free Literature	75
New Products	76
Mechanics' Retaining Guide	78
New Truck Registrations	80
Fleet Notes	150
Introducing	152
Local News	157
Legal Corner	159
Fleetman's Library	160



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COMMERCIAL CAR JOURNAL is published monthly by Chilton Co., N. W. Co.
Chestnut & 56th Sts., Philadelphia 39, Pa. Subscription price: United States
Possessions, \$3.00 per year; all other countries \$10.00 per year. Single copies
except April issue, \$1.00. Acceptance under Section 34.64 P. L. & R. Author-

Rebirth of a Truck—Army Style

Operation Roll-up, now in process in Japan, concerns the rebuilding and complete reconditioning of Army vehicles damaged in World War II. CCJ News Editor Len Westrate toured the battle front and Ordnance operations in Japan as a guest of the U. S. Army to look into what is considered the largest scale rebuilding program the world has ever seen. The program is fantastic, and it is saving you money. See page 51.

PM Lanes Streamline Bus Maintenance

Here's a large bus fleet located on a 3½-acre property that has developed shop and facilities to the nth degree. Shop plans were built around a "traffic flow" in maintenance operations that contributes to speed and PM efficiency. Buses are shunted through each service section with a minimum of conflict, and maintenance is performed on a production line basis. Page 54.

Trailer Tricks Save Time, Weight, Money

Four fleets have developed some neat modifications in flooring, liners, rear doors and protecting rails that promise substantial improvements. They report "weight savings of 800 lb," "a 30 per cent reduction in cost," "less damage from loading" and similar advantages. See page 58.

Used Oil Analysis Guides PM Practices

Laboratory analysis of the crankcase oil is instrumental in aiding fleets to set up PM programs consistent with their peculiar requirements. Faber's reports, used as an index to engine needs from the standpoint of service, adjustments, overhaul, save fuel, save oil, reduce maintenance costs and cut costly road failures. See page 62.

LP Gas—With a Southern Accent

Fleetmen down in Louisiana, Texas and Mississippi are using liquefied petroleum gas in long-distance hauling and are enjoying some startling benefits. See page 72.

More Miles for Your Battery Dollar

You can save yourself many battery dollars by care in selecting the battery to requirements of the vehicle and the operation by servicing on a timely and systematic schedule; by making adjustments to regulators, generators as required. See page 69.

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Slow Poke
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I got 'em in mine.

No more Rust and Scale;

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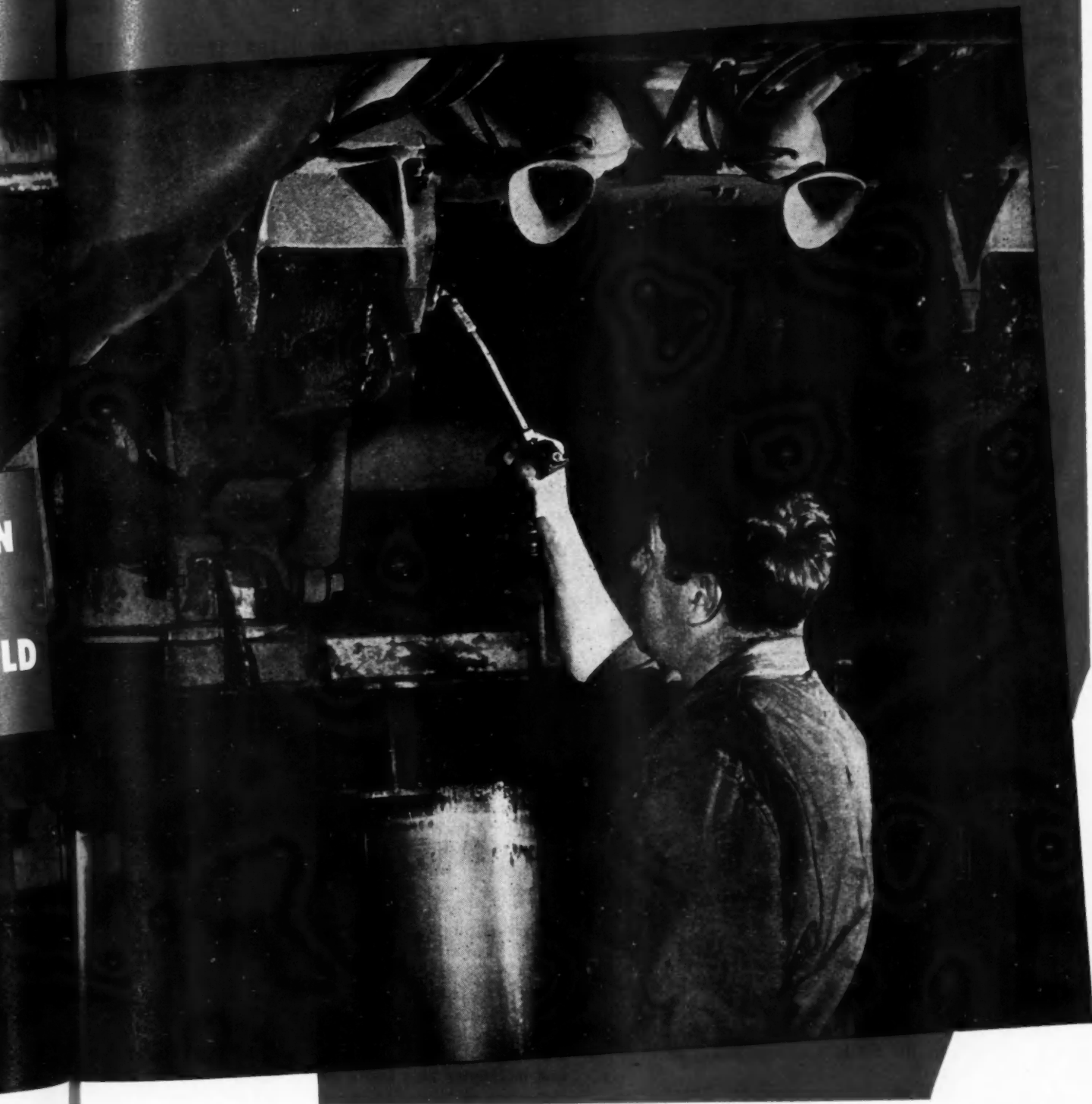
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CONFERENCE C O R N E R

PRESENTING THE EXPERTS' VIEWPOINTS ON TIMELY SUBJECTS OF INTEREST TO FLEETS

Bad Brake Fluids . . . Unrecognized Killers!

by **W. R. FREEMAN**

Chief Engineer
Automotive Division
Wagner Electric Corp.

Very often the accident reports read "cause unknown" when actually brake fluid failure could have been the trouble. It is difficult to tell what might have happened to the brake fluid after the vehicle has been immobilized for sufficient time to enable the fluid to reassume its original non-compressible characteristics.

Regardless of your position you cannot be indifferent about the brake fluid you use. There are differences in brake fluid. It is common knowledge that improper, often dangerously inferior brake fluids are being used extensively. Inferior brake fluid is being sold, perhaps not maliciously, but simply because those responsible for the selection of brake fluid are unable to determine what constitutes the difference between a good brake fluid and a potential killer. Price is often the deciding factor—there will always be those who buy for price reasons alone.

Following are eight additional guides to aid you in the selection of brake fluid. If as the buyer, user or seller you are convinced that the fluid of your choice has the following characteristics, you can be certain that your moral obligation to those who will trust your judgment has been fulfilled.

S.A.E. SPECIFICATIONS—The prime requisite for safe, dependable hydraulic braking is the use of a quality fluid that equals or surpasses the specifications set up by the Society of Automotive Engineers. Manufacturers whose fluid meets these rigid requirements will readily display the S.A.E. specification on their containers.

BALANCED WATER ABSORBING AND LUBRICATING CHARACTERISTICS—Brake fluid is the only source of lubrication for the moving parts in the hydraulic braking system. Since lubricating ingredients by nature oppose water, it is vitally important that the fluid should absorb water without separation of these ingredients. Good fluid is chemically balanced so that lubricating properties are not sacrificed by an unnecessary excess of water absorbing ingredients. The proper

amount of these ingredients is, however, necessary since even a perfect brake system will contain some water, through condensation if no other way. Free water in a system tends to boil off leaving air pockets which readily compress when brakes are applied or it may freeze in cold weather.

BALANCED HEAT-COLD RANGE—A good brake fluid retains its ability to flow at low temperatures and will not vaporize at high operating temperatures. Inferior fluid incapable of withstanding sub-zero temperatures may freeze, thicken or become sluggish. High operating (drum) temperature may cause it to "gas" making brakes inoperative.

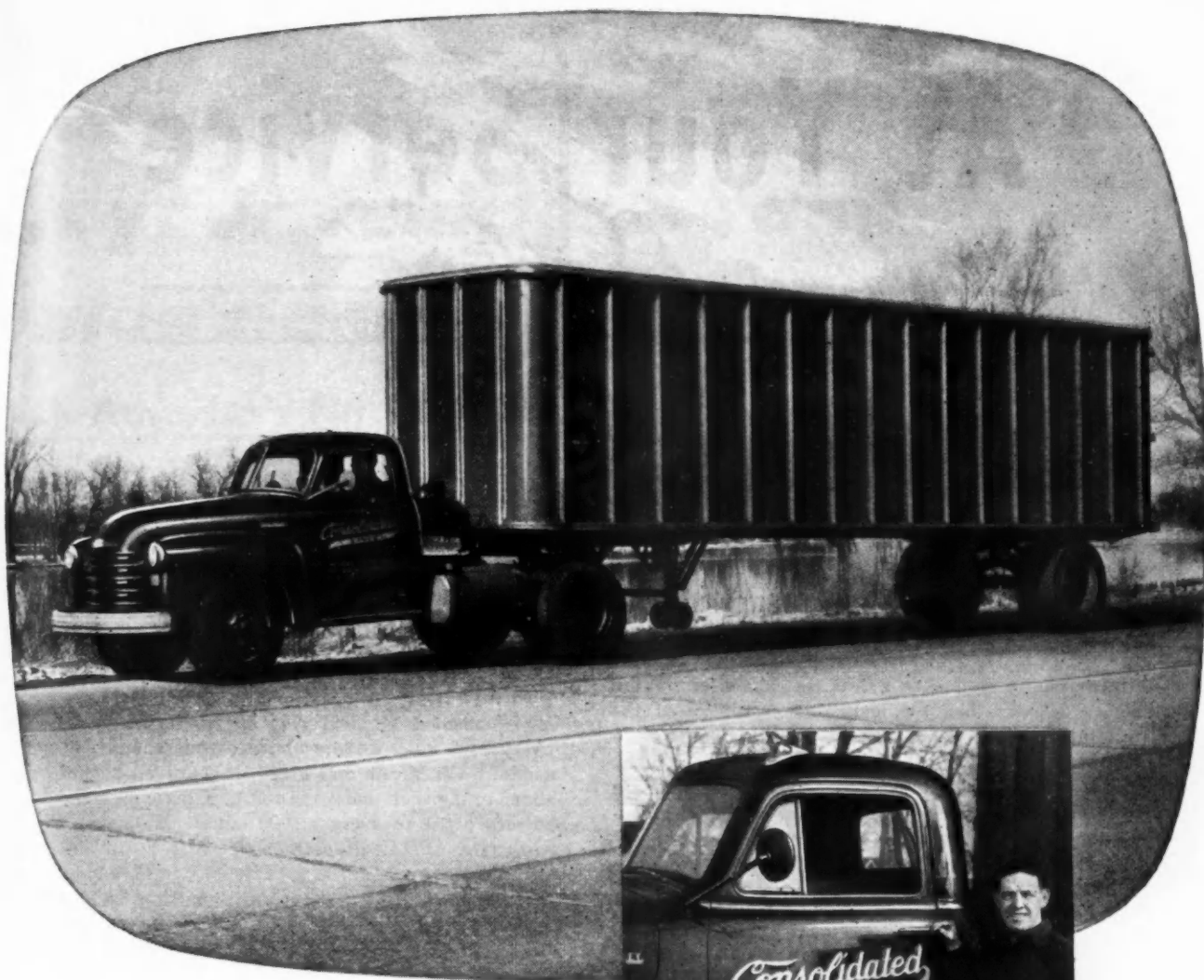
EFFECT ON RUBBER PARTS—Hydraulic brake parts are specifically designed to take advantage of the ability of rubber to expand under controlled conditions. New rubber cups when installed should seal brake fluid in cylinders. Brake fluid is in constant contact with rubber parts and therefore should cause no harmful effects.

Inferior fluid causes rubber parts to soften and lose their necessary resiliency. This results in improper fit which reduces the efficiency of the system and increase the possibility of leaks. Improper ingredients can cause rubber parts to swell and become tacky to the extent of completely immobilizing moving brake parts.

CONTROL OF EVAPORATION—All brake fluids evaporate to some extent. The degree of evaporation makes one of the differences between a superior and an inferior product. Good brake fluid should be chemically balanced to reduce fluid loss due to evaporation to a minimum. Here again the difference lies in the basic ingredients and the proportions used. Evaporation in inferior fluid leaves deposits of granular substances on parts causing excessive wear and a gradual faulty operation of the braking system.

CONTROL OF CORROSION—Safe brake fluid is chemically balanced to neutralize natural chemical or electrolytic reactions between the various metals of the system or between the fluid and those metals. It counteracts corrosive action which weakens parts and causes the formation of jellies and sludges. Lack of
(TURN TO PAGE 14, PLEASE)





*Warner dependability
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One of the first users of Warner Electric Brakes, Consolidated Freight Co. of Saginaw, Michigan has now had more than 17 years' experience with this better braking system.

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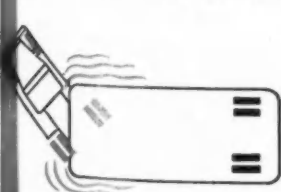
equipped for safe *straight-line* braking... a factor which has made important contribution to Consolidated's excellent safety record.

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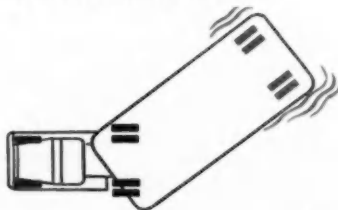
brakes; no freezing up; minimum adjusting and low maintenance.

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WRONG WAY... when brakes aren't synchronized and tractor brakes "come ahead"... jack-knife is sudden, drive wheels slide sharply. Recovery is difficult.



RIGHT WAY... when brakes aren't synchronized and trailer brakes "build up" first... rear of trailer swings, then comes around into a jack-knife.

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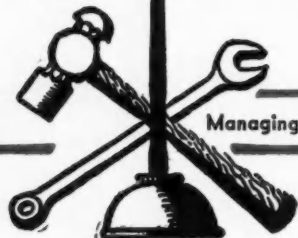


Gives important tips on driver safety through synchronized braking. Explains the precise operation, simplicity of hook-up, amazing economy and added safety features of electric braking. Write today. Warner Electric Brake & Clutch Company, Dept. CCJ, Beloit, Wisconsin.

At Your Service

By M. K. SIMKINS

Managing Editor, Commercial Car Journal



Leaking Condenser

If your ignition trouble appears when the engine is working under load hard enough to get hot, chances are that miss is due to a leaking condenser. There comes a time when the insulation resistance of the winding decreases rapidly with increased temperature so that the secondary voltage is lowered seriously. Under these circumstances the engine may appear to have fouled spark plugs, yet tests with the condenser cold may not show up the trouble.

Leaking condensers seldom cause low or even medium speed miss. So when misfiring occurs under heavy-duty conditions, check the condenser (hot) for evidence of leakage.

Spark Plug Heat Range

If you are having premature spark plug failures, check up on the type plugs used as well as the gap setting before blaming other units in the ignition system. Use of proper heat range plugs is very important in good ignition quality. Heat range refers to the ability of the plug to transfer the heat from the firing end to the block and thence to the coolant. A hot plug has a long insulator nose which transfers heat slowly. Cold plugs have short insulators to transfer heat rapidly. Manufacturers provide recommendations for heat range, but generally vehicles in light service under long idling periods and stop-start operation require hot plugs. High speeds or heavy loads usually require cold plugs. Combustion deposits sticking to the electrodes may indicate that temperatures are too low to keep them burned off. In this case it may be necessary to install a hotter type plug. Evidence of burning, identified by a white, blistered insulator nose may be an indication that colder plugs are required.

And Don't Over-Lubricate

Much has been said on the subject of adequate lubrication of engine and engine parts; something should be mentioned on the subject of over-lubrication, for too much oil in the wrong places may raise just as much havoc as not enough. Points frequently over-greased or over-lubricated are: distributor, generator, water pump, front wheel bearings.

It goes without saying that over filled gear boxes

will soon damage seals or permit oil to be thrown out on other units. Too much oil in the crankcase will produce deposits and coaking of the combustion chamber, and all the troubles that go with it.

In distributor lubrication 8 to 10 drops of engine oil is sufficient for hinge cap oilers every 1000 miles. Every 5000 miles a trace of petrolatum should be put on the breaker cam and a few drops of oil should be added to the wick under the rotor. Grease cups should be turned one turn every 1000 miles. More than this will cause oil soaked parts which will pick up dirt, or burn and result in spark inefficiency.

In generator lubrication eight to ten drops of engine oil at the hinge cap oilers is sufficient every 1000 miles. More than this will seep into the commutator and cause poor performance.

Water pumps (the lubricated types) frequently get too much grease. When the bearing is over-lubricated, the grease may break through the seals and get into the cooling system, where it deteriorates hoses and contributes to radiator restrictions.

Overfilling of the front wheel hubs contributes to leaking seals and lubricant loss when the temperature rises. Bearings and races should be filled with lubricant and the space inside the hub should be left for this expansion.

How to Save Gasoline

Tips from drivers in the Mobilgas Economy run might well be looked into by truck drivers in a move to reduce gasoline consumption. It has been found that driving factors alone can up gasoline mileage as much as 33 per cent in country driving, and while some techniques may not be practical in actual operation, these practices may suggest improvement.

The driver should start in low gear, get into high gear quickly but not without flooring the accelerator pedal. At 20 miles per hour second gear eats up 15 per cent more fuel than high gear, and first gear consumes 30 to 55 per cent more.

Engines should be tuned up frequently. Carburetion, ignition and valve troubles are power robbers. It was found in these tests that a carburetor correction is needed every 14,000 miles and a tune up can add from four to six miles per gallon of gasoline. A lean mixture and a low idle setting save gas. A rich mixture

(TURN TO PAGE 14, PLEASE)

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INDUSTRIAL CRANE BRIDGE BRAKES

At Your Service

Continued from page 10

ture may give faster acceleration, but costs in higher fuel consumption.

The operation of the accelerator plays a major role in fuel economy. Three to seven cubic centimeters of gasoline are spilled out of the bowl every time the accelerator is floored, according to Ralph De Palma, veteran king of automobile drivers. He says that there is no particular advantage to using premium grade fuel if the vehicle performs smoothly and without ping on regular grades.

Lower speeds help to save gasoline. For example, if you are getting good mileage at 30 mph, you can expect to use 10 per cent more fuel at 40 mph; 31 per cent more at 60 mph; and 52 per cent more at 80 mph.

Choice of routes plays an important part in fuel economy. City driving, for example, with stop lights, frequent braking, fast acceleration may consume up to 60 per cent more fuel. Chrysler Corp. states in a booklet on Fuel Economy Through Planned Driving, that "planned driving in the city can save you up to 60 per cent of your gasoline bill." In an actual ten-mile test one driver saved 1/3 in fuel and took only 10 per cent more time.

Cold weather has its effects on fuel consumption. At a temperature of 30 deg, for example, eight miles of driving are normally required to warm up lubricants. During the first mile with lubricants cold, the vehicle delivers 50 per cent less than maximum economy, and during the next seven miles, until engine oil, transmission and rear axle lubricants are warmed up,

the vehicle delivers 15 per cent less than maximum economy. While the driver has little control over temperature, he can at least see that the engine is normalized before starting out, keep speeds down until the engine and gear boxes have warmed up to some extent and see that all facilities for control of engine temperature are in order.

An Infrequent Cause of Sticking Valves

It has been suggested that the manifold heat control valve can be a major factor in valve troubles—if it sticks in the closed position. This not only increases back pressure and deflects hot exhaust gases around the valve chambers, but also creates high temperatures which cause coaking and eventual sticking of the valves in the guides. Admittedly it is not often that the heat control valve will stick, and less often that it will stick in the closed position. However, a routine check should be made during the tune up operations and when carbon formation is noted, the shaft should be freed with penetrating oil or tincture of iodine.

International Service Notes

International has issued a new recommendation covering torque converter fluid used in the LB-140. Torque Converter and Tractor Touch Control Fluid, IH Part No. 355382R1 should be used. . . . On L-110, L-120 and L-130 chassis special metal shields are now available to keep water and dirt from entering the brake compartment through the opening between the backing plate and the brake drum. . . . All IH models with IH and Eaton full-floating axles no longer use an axle wheel flange gasket. A metal-to-metal contact between axle shaft and hub provides a permanent surface against which to tighten the wheel hub stud nuts, and the nuts are more likely to remain tight. . . . Models F-51, F-52 and F-54 series transmissions are now equipped with a spring loaded composition lip type seal in the transmission main drive gear bearing retainer in place of the return thread formerly used. Tendency toward leakage has been overcome with this modification.

Brake Fluids . . .

Continued from page 6

rust inhibiting properties in inferior fluid allows metal parts to corrode or rust—subject to sticking or seizing which produces erratic braking performance and eventual failure.

MISCIBILITY—For safety's sake replacement fluid should *compare in quality* and mix with original fluids used by automobile manufacturers without causing separation of ingredients or reducing their efficiency. Inferior fluids sometimes mix well but lack other equally or more important qualifications. Improper fluids, when added to the system, may not mix completely or may "over-mix" to the extent of lowering the effectiveness of the good ingredients in the fluid currently in the system and so cause eventual brake failure.

STABILITY—A dependable brake fluid will retain its chemical stability under any heat or pressure condi-

tion for which the brake system is designed. Brake fluid should undergo no chemical change which might deposit dry, hard or gummy residue or substantial amounts of sludge. Some so-called brake fluids are little more than improper concoctions of glycerin and water known as "sugar water." These can cause real trouble by carbonizing in the line and on units of the system—eventually causing parts to become sealed in a rigid, immovable position.

These eight simple factors are important to the selection of a safe, dependable brake fluid. For practical purposes they can serve as the nucleus around which to build your investigation of brake fluid offered for your consideration. Presentations of a product are often made, magnifying the alleged advantage of one or two points—without mentioning other equal or more important factors. No wise buyer would select a vehicle merely on proof that it had good tires. Why then trust a brake fluid whose only evidence of "superiority" is its price, or miscibility, or "as good as" claims. Stay with a fluid you know does not compromise with inferior ingredients—a product you can recommend with full confidence.

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COMMERCIAL CAR JOURNAL, May, 1952

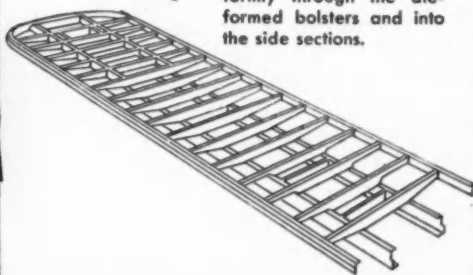


Aluminum quarter panels designed for dent resistant rigidity. The one piece construction of the extruded aluminum quarter panel gives maximum strength to roof and side "beams". Integrally formed drip moulding provides complete watershed.



Diamond side struts made from die-formed steel, welded in jigs for perfect uniformity. Built like a bridge—they carry the load and disperse the stresses and strains.

Load distributor beams running the full length of the frame eliminate load stress concentration—equalize all the load uniformly through the die-formed bolsters and into the side sections.



The

OVERLOAD

E D I T O R I A L C O M M E N T

The Quest for Standard Pars

TO USE a very old but apt expression—breathes there a man with soul so dead who never to himself has said—"durned if I wouldn't like to have some good operating statistics so that I could compare various phases of my operation with similar data from other fleets."

Fortunately progress is being made in that direction. Most active in the search for statistical comparisons is a national committee of bus operators within the American Transit Assn., headed by Paul Dittmar of Harvey, Ill. The group calls their work the development of "Standard Pars"—an expression which we believe most adequately defines the objective. Miles per gallon, maintenance man hours per thousand miles, road failures per thousand miles and life expectancy of parts and components are among the subjects under discussion.

For years, the American Trucking Assns. have been working on the development of standard accounting procedures so that comparable data can be accumulated and offered for comparisons between like fleets, chiefly in the common carrier fields.

Recently the Milk Industry Foundation and the U. S. Wholesale Grocers Assn., both with a big assist from GMC Truck & Coach Division, have been searching for similar data within their respective fields.

Newest entrant is a sub-committee of the American Gas Assn., headed by L. C. Alexander of Cleveland. Here the project is tentatively called "Measures of Performance" and only last month at the AGA's annual convention, Mr. Alexander pinpointed tentative goals. Among them were miles per gallon, miles per road failure, regular time vs overtime and, again, life expectancy of parts and components.

COMMERCIAL CAR JOURNAL itself has already contributed much to the subject through the continuing research of its Board of Experts. Throughout 1949 and 1950 the Fleet Operators' Experience Handbook series presented factual data by vocation, on the expected life of parts. In 1951 the board studied and reported on tire practices and costs. In this issue there is a new series on fuel mileages. Others will follow in this continuing search from which all fleets can benefit.

In all of these quests the problems are complex and myriad. Obviously all such data must be kept within comparable vocations. But the data must also probe deeper. How many stops per mile? How many miles per year? Age of the vehicles? Are the vehicles in level or mountainous areas; in the north or south? How much importance is given to style and obsolescence factors? These and many other factors create formidable hurdles.

But is the job impossible? We do not think so. It would appear that much could be done if certain pitfalls are avoided. One is the dollar sign. Varying costs, particularly for fuel and labor, will always work against a dollar and cents measure. If possible the cash element should be avoided in favor of the more positive elements, many of which are enumerated above.

Another pitfall lies in the die-hards; the men who say it can't be done. But those who are working on the projects know full well that these are the very ones who will use the data most, once they are assembled.

Now that the work is underway, let's keep it rolling. For its own part, CCJ will keep readers posted on latest developments and will welcome all suggestions for better, more workable, more factual Standard Pars.

Bart Rawson

Editor

WASHINGTON RUNAROUND

by KARL RANNELLS Washington Correspondent

Business Looking Up

An increasing volume of business is spelled out for the transportation industries over the foreseeable future. Outlook for defense production is becoming clearer, regardless of Korean negotiations. Officials say deliveries will rise to a quarterly volume of \$10 billion before end of the year, that it will remain at about that level during 1953 and 1954.

Industrial and business expansions continue. Industry plans to spend \$24 billion this year for new plants and equipment. One-half will go into factories and manufacturing plants. Transportation industries are putting \$2 billion into additional facilities—about \$1.5 billion for rail and \$500,000,000 for highway and other transport.

Million Trucks for '52

Danger of a truck shortage is fading, barring strikes or other unforeseen developments. Production prospects for 1952 are now indicated at about 1,000,000 vehicles. Control officials set a second quarter unit quota of 300,000 units and guaranteed materials for 270,000. Talk now is that advance allotments for the fourth quarter will be 80 per cent of this amount, indicating that total allocations would be equal or better than second quarter.

Roughly, 22,500 freight cars were delivered during the first quarter. A total output of 90,000 units is expected for the year—meaning a net gain of 30,000 units in rolling stock, allowing for scrappage. Some 52 tanker ships are on order at shipyards and the first of 35 dry cargo ships has been launched.

New Truck Terminals Needed

Pressure is being brought to bear on government agencies to be more lenient in granting certificates of necessity for building new truck terminal facilities. American Trucking Association surveys show that the trucking industry stands ready to sink \$50,000,000 into expansion of terminal facilities.

Plans are already drawn for adding 3,300,000 square feet of such space. They include expansion of 127 existing terminals and construction of 287 new ones. Fast tax write-offs are sought to help ease the carrying cost burden should the increase in civilian freight volume not show up as soon as now expected.

ICC Revisions Stymied

Currently some will bet on no revision whatever of the Interstate Commerce Act this year. But majority opinion is that a few of the non-controversial proposals

will be taken up and passed by both houses, so long as no debate is required. Time will be the deciding factor.

Senate committee hearings ended after many weeks, but printed copies of the lengthy testimony were not likely to be ready before May 1 at least. The committee's report and recommendations were unlikely to be ready before the middle of May.

This means that with the Senate knee-deep in debate on appropriations, extensions of the production act, and foreign aid, there would be little time to debate the controversial proposals for amendment of the ICC Act. It would also mean delay in getting the legislation before the House which must also approve any such legislation.

R. R. Get 15% Rate Increase

Last month the ICC gave the railroads just about what they had asked for in the way of freight rate increases, the 12th since end of the war. It amounted to a general increase of 15 per cent over the rates as of last August, supplanting the interim hikes since then.

There were exceptions, several groups of items being limited subject to specific maximums, such as coal and coke which could be hiked 12 per cent if no more than 20¢ a ton. Estimated cost to the shipper was placed variously at from \$678,000,000 to \$704,000,000.

Fair Trade Rules Announced

New fair trade practice rules for the refrigerated storage trade have been announced by the Federal Trade Commission, the first revision since 1931. They were scheduled to become effective early in May and will effect more than 700 establishments.

Prohibited as unfair practices are deceptive or misleading advertising, issuing warehouse receipts unless there is actual control of the goods, commercial bribery (using money, gifts or other inducement to influence agents of competitors), and, of course, price-fixing.

As noted last month, proposed revisions of the new safety regulations as submitted by the Bureau of Motor Carriers to the Interstate Commerce Commission carried with them an alternative proposal for each of a half-dozen of the more controversial rules.

This, combined with a heavy docket, has resulted in more delay in the Commission as a whole taking up final consideration. The best that could be hoped for in mid-April was that the way would be cleared for bringing them up during the last half of the month.

Ross

HYDRAULIC POWER STEERING . . . SINCE 1942

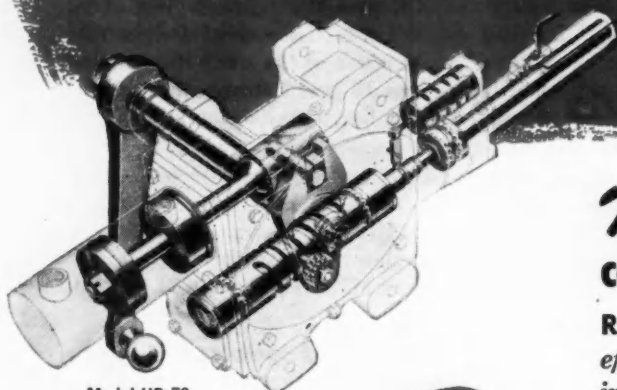


The WOLVERINE . . . pound for pound, one of the strongest, fiercest of all animals. Alert! Responsive! **POWERFUL!**

Alert...

Responsive...

POWERFUL...



Model HP-70

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COMMERCIAL VEHICLES AND PASSENGER CARS**

Ross Hydrapower . . . alert, responsive, powerful . . . gives effortless, fatigueless steering in a compact, completely housed, integral assembly.

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Ross Hydrapower steered wheels promptly return to straight-ahead driving position after turns.

With **Ross Hydrapower** there is no lag in the hydraulic response either for power assistance or resisting shocks—consequently no tendency to over control.

Ross Hydrapower brings new steering ease, safety and satisfaction to commercial vehicles and passenger cars, alike. We invite discussion of any steering problem.

HYDRAPOWER

Ross

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DETROIT DISPATCH

by LEN WESTRATE Detroit News Editor

AMA Studies Truck Problem

Further details on the survey to be made by AMA about the public's attitude toward trucks have been released by that organization. It will attempt to discover how much the public knows about the economic contribution of trucks, taxes paid by the trucking industry, and the services it renders. In addition to finding out the favorable and unfavorable attitudes that the public holds toward trucks, it also will attempt to measure any changes in attitude toward trucks since a similar survey was conducted in 1945. Particular attention will be paid to areas throughout the country where anti-truck propaganda has been the strongest, to determine how effective the attacks have been. Basically, the survey is designed to see just how much of a problem exists so that the industry will know where it stands and how best to meet the problem. AMA is working very closely with ATA in preparing the questionnaire to be used. It is hoped to have the survey completed and the findings analyzed for release by Labor Day.

Higher CR Engines Coming

During the next year or so watch for much higher compression ratios in truck engines—comparable to those in passenger cars. In fact, GMC is announcing this month its new 302 engine with a compression ratio of 7.3 to 1, using regular fuel, which is higher than that now being used in many passenger cars. There is a great deal of work being done by all companies on combustion chamber design, and don't be too surprised if truck engines appear running up as high as 8 to 1 c. r. using regular fuels. Now that tetra-ethyl lead is out from under allocations, insuring that the octane ratings of fuel will stay high, the trend toward higher compression ratios probably will be accelerated.

On Uniform Truck Design

Although there is nothing definite to report concerning the suggestions submitted by the ATA's equipment development committees to truck manufacturers for certain changes in truck design, the truck makers have by no means turned a deaf ear to the proposals. Some of them may show up eventually as part of long range development programs. One of the problems involved, of course, has been the concern of the industry that it might be in violation of anti-trust laws if all vehicles were to become fairly standardized through agreement. However, there is some opinion that uniformity in certain components would be strictly legal and that phase is being given serious study. One

of the things truckers would like to see would be standardization of dimensions from bumper to back of cab at 102 inches, in order to permit interchangeability of trailers and still stay within legal lengths under state laws.

Aluminum Coming Back

As a result of the much improved aluminum supply, light weight options on certain truck chassis components may again be restored before too long. Such items as aluminum axle housings, wheels, and other chassis parts were an early casualty following the outbreak of the Korean war. It looks now, however, as though they may be back in again soon, resulting in savings of several hundred pounds in chassis weight.

Diesel Fuel Adequate

The Petroleum Administration for Defense has made a sharp about-face on its previous predictions that, in the event of a war, quality of diesel fuel for trucks and other civilian uses would suffer. The agency said that, because of advice from the Military Fuel Technical Advisory Committee, it had reversed its opinion. Although PAD did not mention the introduction by Ethyl Corporation of a newly developed compound consisting of a mixture of primary amyl nitrates, it is believed that this may have had an important bearing on the revised opinion. The amyl nitrate compound is being made available by Ethyl to the oil industry. Preliminary tests have shown that it will enable refiners to improve the cetane rating of distillates, increasing the potential output of desired grades of diesel oil.

U. S. Trucks Use Canadian Roads

American truckers will again be permitted to use Canadian highways, closed to them since 1947, under special legislation enacted by the Canadian Legislature. Permission to use the Detroit-Buffalo route, which is 110 miles shorter than the United States route, will be on a selective basis with permission granted principally to trucks hauling defense materials. There also will be specific limitations on the days and hours that U. S. truckers can use the route. Further stipulations provide that American trucks will have to observe the Ontario weight limit, which is two tons lower than that prevailing in Michigan, will have to buy Ontario licenses, and must pay the equivalent of the Provincial gasoline tax on fuel used to travel in the province. Action on the bill was spurred by a threat from the Michigan Public Service Commission to bar Canadian trucks from Michigan highways unless a satisfactory agreement could be reached.

a tougher oil



STANDARD OIL

ccj REPORTS

on News of the Industry

Utility Group Meets in Philadelphia

The Eleventh Annual Motor Vehicle Conference of AGA and EEI (American Gas Association and Edison Electric Institute) held in Philadelphia recently witnessed a record registration. Approximately 150 people affiliated with the motor vehicle conference section listened to a battery of speakers from a wide cross section of industry. When the week was over the Utility boys could tally up as many as eight technical papers and as many round table discussions on various maintenance problems. Tires, brakes, valves, batteries, winches, dynamometers, repair pits and scores of other subjects came in for their share of attention. Excerpts from Mr. Wells' paper on battery selection and service will be found on page 69.

Tank Truckers Meet May 14

Speakers, discussions, entertainment and far-reaching issues to be considered, will again highlight the Mid-Year Meeting of the National Tank Truck Carriers, Inc., at Coronado, Calif., May 14 to 19. Delegates at the meeting will discuss the increase in tank truck transportation of chemicals, truck leasing regulations, proposed ICC commodity descriptions, attempts to arouse public opinion against tank truck transportation of inflammables, recent legislation proposed in the Congress to amend the Interstate Commerce Act, and the growing problems in connection with the National Defense Program.

The speaker list includes W. H. Adams, west coast traffic manager of the Shell Oil Company; D. G. Ward, director of transportation for the Mathieson Chemical Corp.; Robert L. Minckler, president of the General

Petroleum Corp.; Walter F. Mullady, president of the American Trucking Associations, and E. J. Lucas, Chief of the Truck-Trailer Branch, Motor Vehicle Division, National Production Authority.

Re Tax on Diesel Fuel

A recent letter from the Office of Commissioner of Internal Revenue to American Transit Association provided a final interpretation concerning the application of the new two cents a gallon tax on diesel fuel as set up in the Revenue Act of 1951. It was specified that any diesel fuel consumed in a highway vehicle either as a means of propelling the vehicle or in idling the engine to keep the vehicle warm while stored outside, is subject to tax. Thus, all diesel fuel used in a diesel-powered vehicle is taxable, whereas the Federal tax on gasoline is applicable only to such fuel used in propelling the highway vehicle. Diesel fuel for cleaning parts, for space heating or for purposes other than use in the vehicle itself is tax free.

Private Carriers Present Case

The private carriers have presented their case to the Senate Committee on Interstate and Foreign Commerce, telling why they believe that Senate Bill 2362 should be rejected in its entirety, and have voiced their objections to other measures pending.

The carriers contend that "Any change in the basic motor carrier act which would disturb the operations of private carriers would be disastrous to the whole pattern of transportation in the United States." This statement was made by Joseph E. Keller, general coun-

(TURN TO PAGE 111, PLEASE)

DATES and DOINGS

MAY 12-15—American Trucking Assn. Spring Meeting, Dealers-Wallack Hotel, Columbus, Ohio.
MAY 12-16—Fleet Supervisor Training Course, University of Maryland, College Park, Md.
MAY 15—Annual Convention, Rhode Island Truck Owners' Assn., Hotel Narragansett, Providence, R. I.
MAY 15-17—Annual Convention, Georgia Motor Trucking Assn. Inc., Hotel Ogilthorpe, Savannah, Georgia.
MAY 19-23—Pennsylvania State College Motor Vehicle Maintenance Supervisors Course, Penn State Campus, State College, Pa.
MAY 19-JUNE 6—Accident Investigation Course, The Traffic Institute, Northwestern University, Evanston, Ill.
MAY 20-23—American Transit Assn., Region 2 Meeting, Bellevue-Stratford Hotel, Philadelphia, Penna.
MAY 21-23—Assn. of American Battery Manufacturers Spring Meeting, Roosevelt Hotel, New Orleans, La.
MAY 22-24—Annual Convention, Washington Motor Transport Assn., Inc., Hotel Olympic, Seattle, Washington.

JUNE 1-6—Society of Automotive Engineers Summer Meeting, Ambassador and Ritz-Carlton Hotels, Atlantic City, N. J.
JUNE 5-7—Texas Motor Transportation Assn. Annual Convention, Driskill and White Plaza Hotels, Corpus Christi, Texas.
JUNE 6-7—Pennsylvania Motor Truck Assn. Annual Meeting, Penn-Harris Hotel, Harrisburg, Pa.
JUNE 9-13—Driver-Trainer Course, Cleveland College, Western Reserve University, Cleveland, Ohio.
JUNE 12—Central Motor Freight Assn. Annual Convention, Conrad Hilton Hotel, Chicago, Ill.
JUNE 16-20—Fleet Supervisor Training Course, West Virginia Board of Vocational Education, Charleston, W. Va.
JUNE 23-26—Third Annual National Forum on Trucking Industrial Relations, Cosmopolitan Hotel, Denver, Colo.
AUG. 1-3—North Dakota Motor Carriers Assn. Annual Convention, Dacotah Hotel, Grand Forks, N. D.
AUG. 11-13—SAE West Coast Meeting, Fairmount Hotel, San Francisco, Calif.
AUG. 30-SEPT. 2—Mississippi Motor Transport Assn. Annual Convention, Buena Vista Hotel, Biloxi, Miss.

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FOR MAXIMUM
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FOR **LOWEST**
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Expertly engineered pistons make a big difference in engine performance — and operating cost. That's why it's always best to insist on Zollner "Engineer Approved" Pistons when reconditioning your engines. The big majority of engine manufacturers work hand-in-hand with Zollner engineers in the development of pistons best suited to heavy-duty use. Over 70% of all makes of trucks and buses are Zollner equipped — and have been for years. Only when you use Zollners can you be sure that your pistons are expertly designed and precision-made to the individual engine specification for utmost performance and economy of operation.



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of all Truck and Bus Manufacturers.*

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BULLETIN BOARD



PM Begins With the Book

Some mechanics have memories a yard long. They can rely on the old bean for adjustment data on every make and model of truck in the fleet. These guys are good—but they're scarce.

Others take a wild guess at spark plug gap, point setting, float level setting, valve clearance, bearing tolerances, etc. Too busy to memorize and too indolent to go get a manual, they button her up with her adjustments showing . . . and they usually get caught with their crankcases down.

What do you do?

Most of us don't take chances, or rely on memory. We know exactly where to find adjustment data and service information. And we're not embarrassed by jobs that come back—behind a tow truck.

It's a funny thing. The guy who can remember his gal's telephone number (and other critical and physical data) is often confused by staid figures in a manual. And when a parts book is opened, he's as shy as a damsel at a smoker.

A "hope-to-God" adjustment will not keep an engine happy. And a "think-so" is usually off from .001 to .100. A strong right arm will never replace a torque wrench, and the mechanic who can feel wear should be confined to the blacksmith shop.

So get the fact before you act. These days, the only figures you can believe are in a data book, though on the surface of things they may appear less interesting. Take a new look at the old book in the interest of accuracy. For precision is a prime prerequisite of preventive maintenance.



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**DESIGNED TO MEET THE SPECIFIC NEEDS
OF HEAVY-DUTY FLEET OPERATION!**

You can get the proven performance superiority of copper-lead bearings *plus* exactly the type you need, in the complete Federal-Mogul line.

Leading fleets have demonstrated that these copper-lead bearings give a substantial extra margin of mileage . . . a "bonus" you can use to lengthen service between overhauls, or as a

safety factor protecting against down-time on the road. Whether you use the CP (precision inserts in standards or undersizes) or CA (re-sizeable copper-leads in semi-finish) you are getting the best in all-around efficiency and economy. Ask your Federal-Mogul jobber!



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Engine Bearings—(Main, Connecting Rod and Camshaft) • Bushings • Connecting Rod Service • Exchange Insert Rods, Rebabbitted Rods • Connecting Rod Bolts and Nuts • V-Seam Piston Pin Bushings • Shims and Shim Stock



Whatever your service bearing needs may be, you'll find the right answer in the Federal-Mogul package!

Safety shop with potted ge Clerk: of gerani some nice Safety they won't water the away."

They s caressed his shoul on his. don't you Timid T got sand i Aggressi swallow i you do."

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Fleet C asked for Daugh to leave Fleet C played by very adm leave you you!"

Sweet Y ried, darli wife. I'll o the house money. W Truck I unless he

COMMERC



Safety Director: (Entering flower shop with worried look) "I'd like three potted geraniums, please."

Clerk: "I'm sorry, sir, but we're out of geraniums just now. How about some nice potted chrysanthemums?"

Safety Director: "No, no, I'm afraid they won't do. I promised my wife I'd water the geraniums while she was away."

CCJ

They sat on the beach. Her hair caressed his face. Her head rested on his shoulder and her eyes looked down on his. Finally she murmured, "Why don't you kiss me?"

Timid Truck Dispatcher: "I can't. I've got sand in my mouth."

Aggressive Gal Friend: "Swallow it, boy, swallow it. If anybody ever needed it you do."

CCJ

Two truck mechanics, after shooting a deer, found themselves lost in the mountains. Finally, one said, "I know how we can get back to town. We'll just shoot another deer."

"How would that help?" asked his buddy.

"Why, you know darned well that if we shot another one, it would be illegal and there'd be a game warden show up within ten minutes."

CCJ

The new knucklebuster down in the shop bought a pool ticket the other day and landed a \$500 jackpot. That called for some celebrating. Someone asked him how he picked the winning number 5151.

"I dreamed about the number 7 for a week. Seven days times 7 is 51, so I played it in combination."

CCJ

Fleet Operator: "Your young man asked for your hand and I consented."

Daughter: "But, father, I don't wish to leave mother."

Fleet Operator: "Such feeling displayed by a child this day and time is very admirable. You don't have to leave your mother. Take her with you!"

CCJ

Sweet Young Thing: "After we're married, darling, I'm going to be a real good wife. I'll cook, sew, darn your socks, keep the house nice and clean and try to save money. What more could any man ask?"

Truck Driver: "Well, nothing I guess, unless he was evil minded!"

Garage Operator: "There's a man coming over right away to discuss a big deal with me. We're going to consider the advisability of moving my shop to another location."

Grease Monkey: "Really, boss? Who is the man?"

Garage Operator: "My landlord!"

CCJ

"You are charged with throwing your mother-in-law out of the eighth floor window. How do you plead, guilty or not guilty?"

"Guilty, Your Honor, I did it without thinking."

"That's a very poor excuse. You could have injured an innocent pedestrian. I fine you \$5."

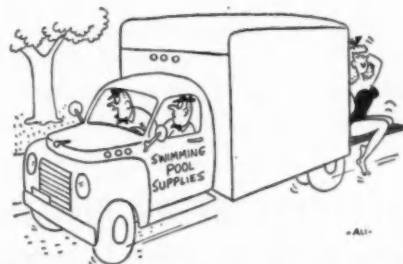
CCJ

The elderly tank truck driver was finally retired by his company because of the infirmities of old age. The old codger longed for the hum of a good engine and the singing of tires as he knew them in brighter days. In his despair he turned to strong drink. Finally, he consumed so much alcohol that he started seeing pink elephants. He saw so many of them that he hired a hall and put up a sign, "25 cents to see the zoo."

A couple of customers resented the fact that they saw nothing for their money but four bare walls, and swore out a complaint. When the sheriff came to make the arrest, the old driver hauled his jug out from under the counter.

The sheriff took three snifters and paid him \$600 for half interest in his show.

"Cici Jay"



"Take a look in the mirror, Hank . . . hitch-hiker on the diving board."

After six months of competing with two other guys for the heart and hand of the cute little blonde, the Diesel Mechanic finally built up enough courage to take the last desperate plunge. Forcefully, but tenderly, he enfolded the girl of his dreams in his arms, mustered up his last vestige of courage and said: "Whisper those three little words that will make me walk on air."

Quickly, the little blonde responded: "Go hang yourself."

CCJ

Cub reporter on the shop gossip sheet starts his new short story like this: "There she was, overcome by gas, lying in the partly filled bath tub, little realizing that she owed her life to the watchfulness of the janitor."

CCJ

Truck Terminal Mgr.: "My, my, but you look completely worn out this morning. What happened, Were you out painting the town red last evening?"

Travelling Auditor: "No, not at all. You see I went to bed but couldn't go to sleep. I started counting sheep, made a mistake, and it took me the rest of the night to find it."

CCJ

Question: "Can you cool the engine by stripping the gears?"

CCJ

The Auto Parts Clerk was apparently coming down with influenza. His young and inexperienced wife attempted to take his temperature. In horror she read the gage then made a frenzied rush for the telephone: "Doctor, doctor, please come at once. My husband's temperature is 136."

Calmly the doctor replied: "The case is beyond my skill, lady. I suggest you telephone for the fire engine, at once."

CCJ

The Freight Claim Agent's wife was writing to their son, congratulating him on his engagement . . . "My Darling Son: . . . What wonderful news! Your father and I rejoice in your happiness. It has long been our greatest wish that you should marry some good woman. A good woman is heaven's most precious gift to man. She brings out the best in him and helps him to overcome all that is evil."

Then there was a postscript in another handwriting: "Your mother has gone for a stamp. Keep single, you fool."

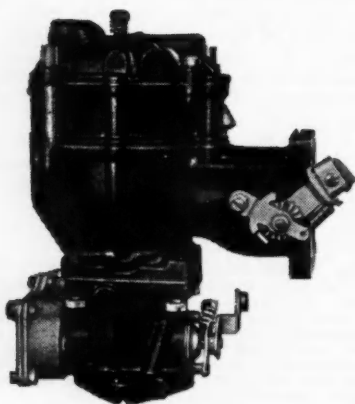
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Does Your Truck Have Sales Appeal?



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and
PERFORMANCE
DEPENDS ON

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In the practical field of commercial transportation, product preference is determined solely on performance. Nothing contributes more to the achievement of this desirable end than efficient carburetion. You can be sure that manufacturers whose vehicles are equipped with Zenith, the leader in the field of heavy duty carburetion, have measured carburetion costs in lasting terms rather than initial expense. Zenith's rugged construction, strong idling, freedom from stalling and response to every power demand gives any commercial vehicle added sales appeal. It pays to specify Zenith—the engineers' choice for trouble-free operation.

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Rebirth of a Truck ... Army Style

CCJ News Editor Len Westrate has just returned from a four-week trip with an Army inspection group, visiting Alaska, Japan, Korea, and Hawaii. The following article, the first of a series of three, provides first hand observations of maintenance and operation of trucks in war. The following article covers rebuild and maintenance facilities as set up by Operation Roll-up in the Oppama Ordnance Shops in Japan. Operations at the Tokyo Engineering Works and the Tokyo Ordnance Depot, as well as other interesting developments in Alaska and US will be covered in later articles.

One of the most dramatic developments incident to the current Korean war has been "Operation Roll-up." At the conception of Operation Roll-up Ordnance surveyed Japanese industrial plants and former military installations and found that they could be adapted to handle rebuilding and renovating of the abandoned equipment. In addition skilled labor was plentiful and cheap. As a result the program got under way in 1948 and extended through '49 into the early months of '50. The first step was to collect and transport the unserviceable vehicles to Japan, to be segregated and classified. Next phase was sorting and reclaiming of as many serviceable components as possible, after which equipment was ready for the rebuild operation. About 63,000 automotive vehicles were collected during the roll-up operation and brought to Japan for rebuild, of which more than 50,000 had been rebuilt by the

middle of last year, with peak production as high as 216 vehicles daily.

In its simplest terms, Operation Roll-up consists of the salvaging of uncounted thousands of tons of World War II supplies and equipment left to rot on Pacific Island outposts after the great and hasty demobilization following World War II. Value of the Roll-up operation to the United States are incalculable from four major standpoints. First, it is extremely doubtful that this country could have launched a successful operation in Korea had it not been for the vehicles already rebuilt and the rebuilding facilities available to carry the load. At the outbreak of hostilities enough equipment was on hand in Japan to support an initial military operation and the tempo of rebuild and supply at Ordnance bases there was stepped up to meet the need. About 80 per cent of the general purpose and combat vehicles, and nearly 40 per cent of the tanks used in the campaign came from depots in Japan.

As an example of savings resulting from the rebuild operations, the Ordnance Corps reveals that cost of rebuild for various vehicles in comparison with new costs are as follows: Jeep, \$780.71 — \$2039.00; $\frac{3}{4}$ ton truck, \$1647.92 — \$3543.00; $1\frac{1}{2}$ ton truck chassis, \$1367.23 — \$4,000; $2\frac{1}{2}$ ton truck, \$1,517.41 — \$6337; and medium tank, \$5819.61 — \$244,073. These figures include all military and civilian supervisory costs.

Operation Roll-up salvages 216 vehicles daily; furnishes 80% vehicles used in Korea; has rebuilt 50,000 army trucks to date

By Len Westrate

CCJ Detroit News Editor

THE Oppama Ordnance Shops are about 14 miles south of central Yokohama and were formerly a Japanese naval base and naval aeronautics research center. They cover about 370 acres and comprise nearly 1.4 million sq. ft. of covered floor space in 78 shops in warehouse buildings. Function is complete disassembly and rebuild of military vehicles of $2\frac{1}{2}$ tons and smaller. The contractor who operates the shops under military supervision is Fuji Motors Corp., which has the function of providing personnel and supervising their activities.

Sequence of Operations

PRODUCTION operations consist of seven separate phases as follows:

1. *Selection and precleaning.* All vehicles and component parts are given a thorough inspection to deter-

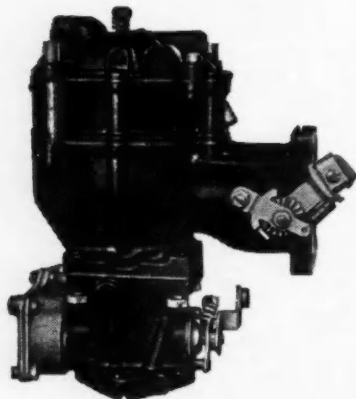
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IT ALL DEPENDS
ON PERFORMANCE
and
PERFORMANCE
DEPENDS ON

Zenith CARBURETORS



In the practical field of commercial transportation, product preference is determined solely on performance. Nothing contributes more to the achievement of this desirable end than efficient carburetion. You can be sure that manufacturers whose vehicles are equipped with Zenith, the leader in the field of heavy duty carburetion, have measured carburetion costs in lasting terms rather than initial expense. Zenith's rugged construction, strong idling, freedom from stalling and response to every power demand gives any commercial vehicle added sales appeal. It pays to specify Zenith—the engineers' choice for trouble-free operation.

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696 Hart Avenue • Detroit 14, Michigan

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.





Rebirth of a Truck ... Army Style

CCJ News Editor Len Westrate has just returned from a four-week trip with an Army inspection group, visiting Alaska, Japan, Korea, and Hawaii. The following article, the first of a series of three, provides first hand observations of maintenance and operation of trucks in war. The following article covers rebuild and maintenance facilities as set up by Operation Roll-up in the Oppama Ordnance Shops in Japan. Operations at the Tokyo Engineering Works and the Tokyo Ordnance Depot, as well as other interesting developments in Alaska and US will be covered in later articles.

One of the most dramatic developments incident to the current Korean war has been "Operation Roll-up." At the conception of Operation Roll-up Ordnance surveyed Japanese industrial plants and former military installations and found that they could be adapted to handle rebuilding and renovating of the abandoned equipment. In addition skilled labor was plentiful and cheap. As a result the program got under way in 1948 and extended through '49 into the early months of '50. The first step was to collect and transport the unserviceable vehicles to Japan, to be segregated and classified. Next phase was sorting and reclaiming of as many serviceable components as possible, after which equipment was ready for the rebuild operation. About 63,000 automotive vehicles were collected during the roll-up operation and brought to Japan for rebuild, of which more than 50,000 had been rebuilt by the

middle of last year, with peak production as high as 216 vehicles daily.

In its simplest terms, Operation Roll-up consists of the salvaging of uncounted thousands of tons of World War II supplies and equipment left to rot on Pacific Island outposts after the great and hasty demobilization following World War II. Value of the Roll-up operation to the United States are incalculable from four major standpoints. First, it is extremely doubtful that this country could have launched a successful operation in Korea had it not been for the vehicles already rebuilt and the rebuilding facilities available to carry the load. At the outbreak of hostilities enough equipment was on hand in Japan to support an initial military operation and the tempo of rebuild and supply at Ordnance bases there was stepped up to meet the need. About 80 per cent of the general purpose and combat vehicles, and nearly 40 per cent of the tanks used in the campaign came from depots in Japan.

As an example of savings resulting from the rebuild operations, the Ordnance Corps reveals that cost of rebuild for various vehicles in comparison with new costs are as follows: Jeep, \$780.71 — \$2039.00; $\frac{3}{4}$ ton truck, \$1647.92 — \$3543.00; $1\frac{1}{2}$ ton truck chassis, \$1367.23 — \$4,000; $2\frac{1}{2}$ ton truck, \$1,517.41 — \$6337; and medium tank, \$5819.61 — \$244,073. These figures include all military and civilian supervisory costs.

Operation Roll-up salvages 216 vehicles daily; furnishes 80% vehicles used in Korea; has rebuilt 50,000 army trucks to date

By Len Westrate

CCJ Detroit News Editor

THE Oppama Ordnance Shops are about 14 miles south of central Yokohama and were formerly a Japanese naval base and naval aeronautics research center. They cover about 370 acres and comprise nearly 1.4 million sq. ft. of covered floor space in 78 shops in warehouse buildings. Function is complete disassembly and rebuild of military vehicles of $2\frac{1}{2}$ tons and smaller. The contractor who operates the shops under military supervision is Fuji Motors Corp., which has the function of providing personnel and supervising their activities.

Sequence of Operations

PRODUCTION operations consist of seven separate phases as follows:

1. *Selection and precleaning.* All vehicles and component parts are given a thorough inspection to deter-

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OPERATION ROLL UP

Rebuilding begins with the battered vehicle . . . entails a series of steps in cleaning, disassembly, repair, assembly, tune up and repainting . . . ends with the re-conditioned truck, ready for battle again



mine economical repairability. All those found rebuildable are put through a precleaning process with mud, dirt, and other corruption removed by oil soaking and pressure steam cleaning together with some hand scraping.

2. Disassembly. Vehicles move down two assembly lines where bodies, engines, power train units, and all other parts are removed in that order until only the frame is left. Subassemblies, such as engines, are routed to specialized repair shops, with the exception of power train units, which are loaded from the disassembly line to trailers and transported to the Tokyo Engineering Ordnance Works Ordnance Shops for rebuilding.

3. Chemical cleaning. While en route to various rebuild shops, component parts are put through a chemical cleaning process consisting of an alkali bath at fixed temperature (210° F) to remove grease and paint, after which comes a rinse in clean

hot water to arrest alkali action, and a final bath in phosphoric acid to remove rust and leave a bonderizing coat.

4. Repair. All parts, except power train units, are rebuilt at the Oppama plant in special shops for individual items. Components are completely torn down and worn parts repaired or replaced, and the unit is then re-assembled, gaged, and inspected for fits, using original factory tolerances as standard. They then are given a primer and initial coat of paint before being sent back for assembly into the rebuilt vehicles. Even extremely small parts such as bolts, nuts, and washers and other fasteners are reclaimed in special shops.

5. Assembly. When vehicles are rebuilt they follow the same sequence and practically the same order of build-up as used in truck plants in the United States. Sub-assemblies are fed into the 440-ft. main conveyor line and axles, propeller shafts, and similar chassis units are attached to the

upside-down frame, which is then turned over and the remaining components attached, just as in a Detroit plant. The vehicle leaves the line under its own power.

6. Tune-up and inspection. Following completion vehicles are driven to a tune-up shop for adjustment and then experienced inspectors give them a thorough shakedown road test to discover any functional defects.

7. Painting and processing. When the rebuilt vehicle has passed final inspection it is moved to a paint shop, where it is pressure cleaned. Two vehicles are painted at once in a 12-minute cycle through air-conditioned paint spray booths and infra-red drying booths. Final step is stenciling of registration numbers before the vehicle is turned over to the supply office.

It is difficult to enumerate, because of space limitations, all of the operations involved in repairing and reclaiming components. However, a number of the operations are ex-

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tremely interesting because of the ingenuity required to meet needs that cannot readily be filled in Japan. This fact, plus the low labor cost make it economically feasible to repair some parts and to manufacture others on the scene because the job can be done cheaper than buying new parts in the United States, to say nothing of the long time lag involved.

Some Neat Tricks

BECAUSE of extreme internal corrosion some engine blocks do not have enough sound metal left to permit cylinder boring. In such cases new cylinder sleeves are made from seamless steel tubing and installed in the block, after which they are honed and standard pistons used. Where the block can be rebored to oversize, this is done and the cylinder is honed. Matched sets of pistons, connecting rods, and bearing nuts are carefully fitted by hand.

All bearings are inspected and, if necessary, bearing races are reground

and oversize rollers or balls are installed. Worn ring and pinion gear sets are put on a lapping machine and run in with a fine grinding compound so that correct gear tooth contact is obtained. In the case of worn internal surfaces on constant velocity joints, these are ground to oversize on profile grinders and oversize balls are installed. Wheel spindles, cluster gears, shift mechanisms, bushings, spacers, and shafts are rebuilt to original tolerances.

Subassemblies are rebuilt on roller conveyor lines with constant gaging and inspection to insure that exacting tolerance standards are met at all times. Facilities for rebuilding components even include such items as carburetors and ignition parts and a complete body rebuilding shop. Following completion of major subassemblies they are put on special test devices to insure that they are operating up to standard. Gear trains, for example, are run in both directions at all speeds to detect any gear noises.

One noteworthy operation is the development of the process for reclaiming radiators that have previously been considered economically repairable. Upper and lower tanks are removed by melting the soldered joint with a torch, and the radiator cores are placed in a hot caustic solution and cleaned by running a steel rod through the tubes. Strips of tin solder are placed in each tube and the core is then put into the tinning furnace to flux the tin. The core is taken out and surplus solder is blown out by air, leaving only a thin coating on the inside of the tubes. Fins are individually straightened by girls using gas torches and needle nosed pliers. After tanks and outlet tubes have been straightened or replaced when necessary, the radiators are reassembled and soldered. All solder dropped on the floor is swept up and melted and formed into usable solder strips.

(TURN TO PAGE 102, PLEASE)



Buses line up at new Venice garage refueling island which is supplied by three 10,000-gal diesel tanks, two 10,000-gal gasoline tanks, an 8000-gal oil tank

PM Lanes

Streamline Bus Maintenance

Modern bus fleet located on 3½-acre property features unique vehicle maneuverability in new shop set up. PM lanes eliminate "dead ends"; allow for easy movement of vehicles to all sections for inspections, repairs tire work • Accommodates 150 buses



By George F. Squires

Vice President
The Pacific Electric Railway Co.
Los Angeles, Cal.

V BUS maintenance grows steadily more important to the Pacific Electric Railway Co., Los Angeles, as it moves into the final phases of a \$7 million conversion from passenger rail to motor coach service. A new \$315,000 facility for storage and repair at Venice, just South of Los Angeles, marks another step in a program which has already seen the purchase of 199 new coaches in the past 15 months,

at a cost of \$4,533,000. A total of more than \$600,000 has been spent on new and expanded garage and terminal facilities.

The one-story structure at Venice handles service, overhaul and storage for 150 buses. Located on a property of approximately three and a half acres it has the wonderful advantage, seldom found in Eastern fleets, of having enough room for easy maneuvering of vehicles to any service

operation needed without conflict of any kind.

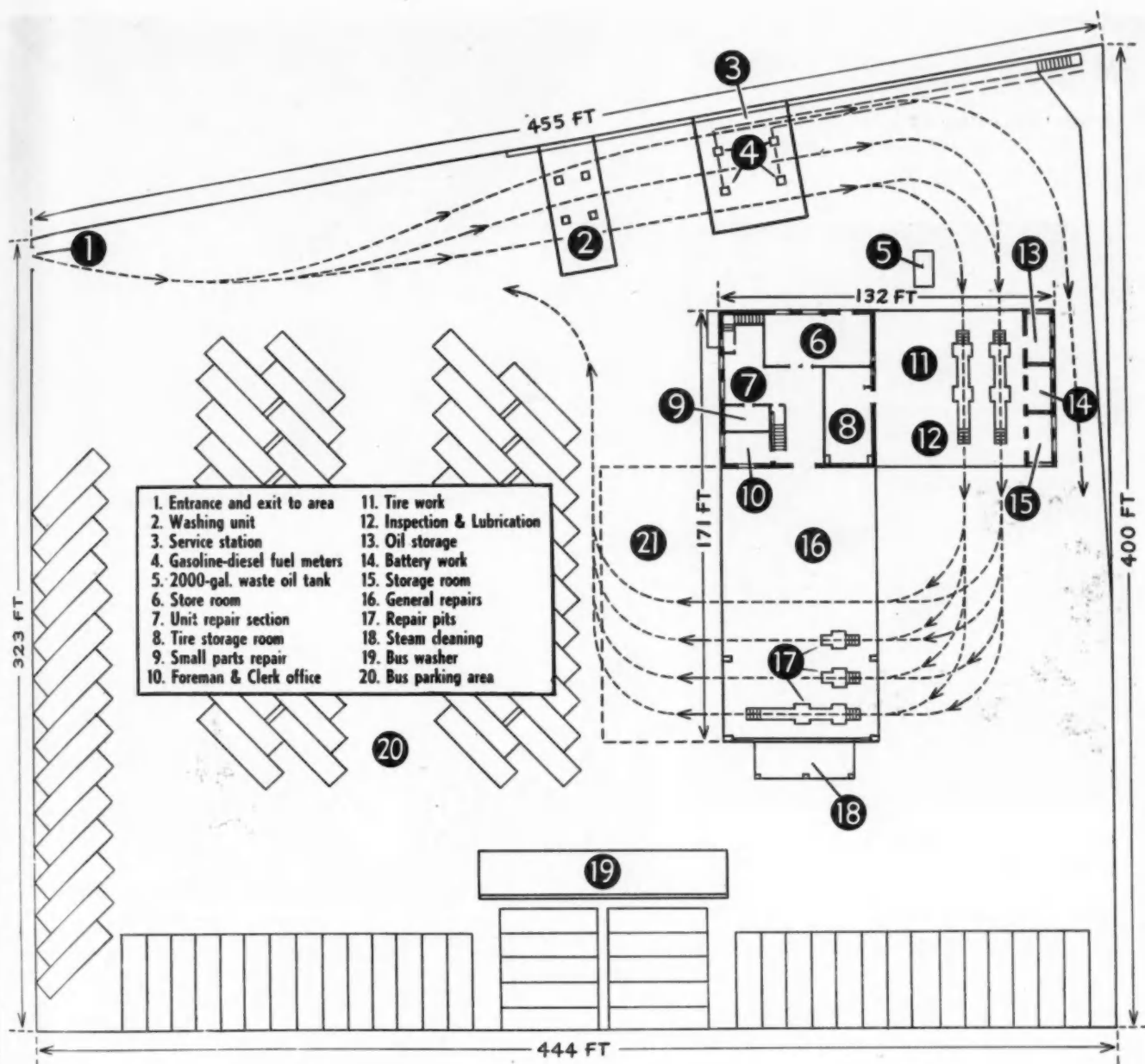
All lanes within the building are open at both ends (in Southern California we don't even need doors) eliminating the "dead-end" feature. But in addition we can route buses for tire work, inspections or general repairs as may be required without interference with other operations.

The flow of traffic works out this way: Coaches enter and leave at

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Legend shows location of each service area. Note flow lines showing "straight through" service without conflict of any kind. Facilities are sufficient for overhaul and storage of 150 buses



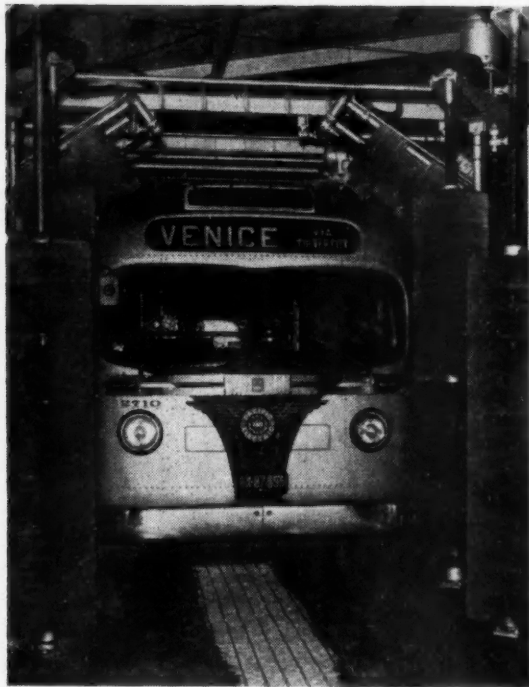
Vehicles at right are coming out of the inspection and lubrication department and are headed for either the general repair area, center, or the repair pits, extreme left. Steam cleaner is located at left end of shop

the northwest corner of the garage property, the entrance of which is wide enough to permit two-way traffic. While only one opening for entrance and exit is now in use, an additional exit west of the present gate can be arranged if needed. As coaches enter they are lined up according to the type of work needed. An appropriate card is placed in the windshield of the coach indicating

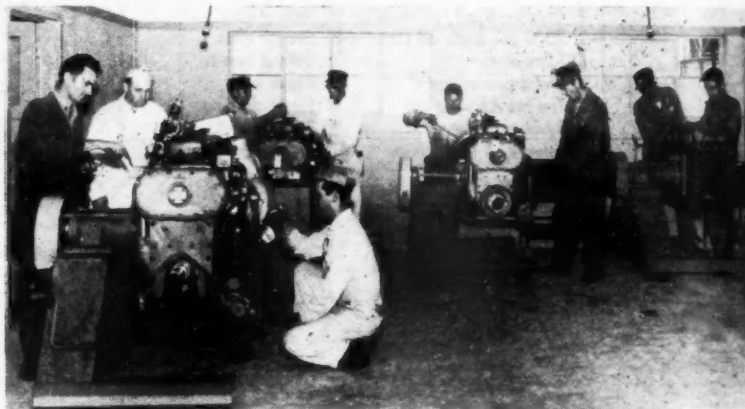
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PM Lanes . . .

Continued from Page 54



King size shower bath covers bus in 60 seconds. A magic eye controls soap and water sprays and rotary brushes



Top. Fluorescent lighting is beamed at the underside of the coach. Built in oil drains are provided. Tunnels between adjoining pits protect mechanics in case of fire. Below. In the unit repair shop expert mechanics complete engine rebuilding, make final inspection

the work required. The next stop is for a quick manual washing of front and rear end. The coach then moves to the service island for refueling, lubrication, radiator check and engine wash when necessary.

From this point, coaches are segregated; those not needing work bypass the building entirely, going directly through the washing machine (if washing is required), at the south end of the property, and are parked in the central paved area. Coaches due for inspection enter the inspection wing from the north. If no major repair work is found necessary, they are routed around the repair section to the parking area. If repair work is required, they can enter the repair shop. The existence of

this by-pass also permits coaches to enter the repair section directly when for any reason they do not need to go over the inspection pits.

Modern Equipment Used

MODERN equipment is the word throughout, from exterior cleaning equipment to shop tools. A typical new installation is a \$16,250 automatic bus washer, which with "magic eye" controlling soap and water sprays and rotary brushes, cleans the exterior in 60 seconds. The small wash unit, near the northeast entrance, is for washing front and rear ends and is manually operated.

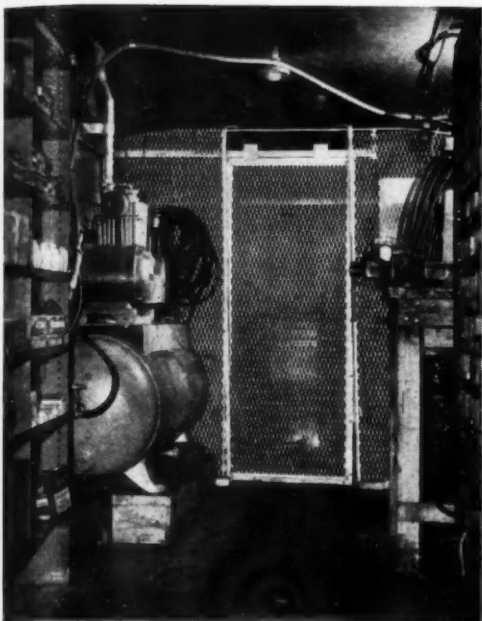
Fuel consumption is handled by three 10,000-gal diesel fuel tanks, two 10,000-gal gasoline tanks, and

one 800-gal lubricating oil tank—all underground. These fuel and lube oil tanks are close to one of the yard's railroad spurs which enables delivery of supplies by tank car as well as by truck and trailer.

Servicing pits are kept light and clean. Fluorescent lighting, beamed at the underside of the coach, and adjustable built-in waste oil drains are provided in the pits. A removable section facilities heavy work on both gasoline powered and diesel buses. Connecting safety tunnels between adjacent pits protect mechanics in case of fire.

As all of the company's diesel coaches are rear engine models, it was not considered necessary to have lifts installed in the garage. How-

(TURN TO PAGE 87, PLEASE)



Truck No. 1 carries air compressor, light unit, grease, tools and all equipment necessary to service 200 company leased vehicles



Wall board at headquarters carries movable cards with complete PM information on the 1000 pieces of company equipment. Below. View of cab forward emergency repair truck—saving \$3000 per year since 1949

Mobile Service Truck . . .



by W. Walter Neumann

Director of Maintenance
The Willett Co.

IN AUGUST, 1949, The Willett Co. put into use its first mobile service truck. It was designed to provide on-the-spot PM service and emergency repairs on about 200 vehicles leased to various business concerns, and being operated by them out from about 20 different garages and night loading stations widely scattered over the Chicago industrial areas.

This first Willett "traveling repair shop" proved to be so practicable that, in November, 1950, we developed a second like unit. This newer mobile service truck is somewhat larger in size and was especially designed to handle periodic PM servicing and emergency repair work on heavier company operated units. It is being used permanently at our South Chicago shop, headquarters for

our heavy-duty equipment, which now includes 30 train petroleum transports, and 48 steel tractors with 80 heavy trailers. In addition, this latest mobile unit handles emergency road calls for this South Side area; and also PM servicing for leased equipment being operated in this area.

These two Willett mobile service units now in use are credited with the following operating advantages:

1. Save many hours of driver time; as compared with the former plan which required that all company trucks needing even light ser-

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TRAILER TRICKS Save Time, W

Modifications in flooring, liners, rear doors, protecting rails and side panel repair

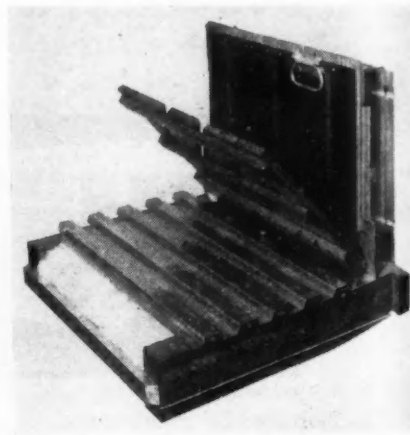
Aluminum Floor Saves 800 lb.

By Scotty Jolly, Body Shop Supt., Consolidated Freightways



The flooring as used in a Consolidated trailer. Herringbone racks can be lifted up and attached to sides to fa-

cilitate cleaning. This type floor runs 15% higher than conventional floor. Sample shows corrugated aluminum



floor mounted on 3 x 6-in. Douglas fir with furring strips placed under the corrugated riser for better support

BY USING an especially constructed aluminum floor for our trucks and trailers we are saving around 800 pounds per unit. The cost of the aluminum floor installed runs just under 15 per cent higher than the cost of a conventional wooden floor.

We use .064 aluminum (61ST alloy) corrugated in a power brake to give 1½ in. width in the trough and a rise of ¾ in. This corrugated aluminum floor is mounted on 3 by

6-in. cross bars of Douglas fir placed on the trailer frame. A ⅝-in. carriage bolt is put through from the aluminum floor to the underneath frame and bolted with clamps to the frame. On a 28-ft trailer we use 5 bolts on each side approximately 6 ft. apart.

At the rear of the trailer floor, where wear is heaviest, we insert a 24-in. wood stringer under the corrugated rise. Over this aluminum floor we use a herringbone floor rack

made out of 1 by 4-inch. Douglas fir, with ¾-in. spacers. These herringbone racks lift up and can be attached to the sides of the trailer or truck to facilitate cleaning.

This floor on a 28-ft trailer weighs around 700 lb as against approximately 1500 lb for a conventional wooden floor. It allows for perfect ventilation for frozen food loads in fact all loads where refrigeration is required.

Weight, Money

repairing offer tangible advantages to these four fleets

Chain Gate Saves Space, Materials, Maintenance

By Charles G. Brokowsky, Associated Truck Lines, Inc.

SAVINGS amounting to thousands of dollars a year have been realized by us through a program aimed at conserving materials and manpower. One phase of this program is concerned with the repairing of 520 trailers in the Grand Rapids shop.

Several years ago we began to replace damaged steel doors with a chain gate. There have been many objections to chain gates; The answer lies in proper design and construction. This gate is fabricated of chain welded together to form a netting with both the vertical and horizontal strands 4 in. apart. Extra horizontal chains at the bottom close the spaces to 2-in. widths. At the top the gate functions much like a shower curtain through the use of harness rings mounted on rods. When closed there are two center posts and two other posts set midway to the sides to provide a rigid gate.

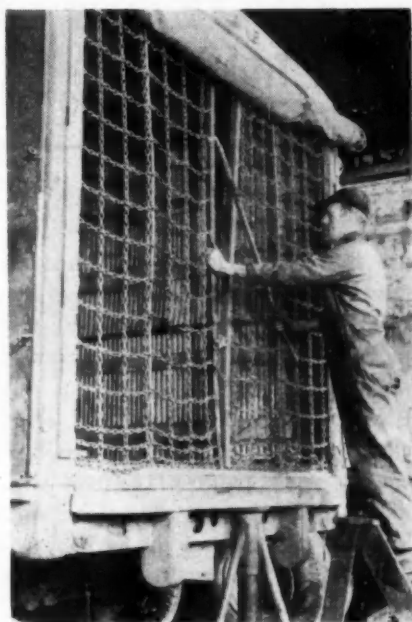
A tightening handle enables the gate to be pulled tight when closed. Each of the four vertical posts is seated in a hole 1½ in. deep.

When this gate is opened its

widest, it takes up only a few inches of room at either side of the door which is entirely satisfactory for most loading or unloading conditions. In cases where it is necessary to utilize the full width of the door the rods at the top can be unlocked at the center and swung outwards. The hinges that make this possible are nothing more than pieces of pipe welded to the sides of the door. Weather proofing is provided by an ordinary tail tarp of number 8 Duck fastened at the top. Weather stripping is mounted down the edges of the door so that the tarp can be fastened securely with tie ropes.

The cost of doing this has always been substantially less than the cost of replacing just the one door. At the present time the cost of a chain gate installation, including labor and materials, is just \$65. One steel door costs about \$70. The good door that was taken off was then saved to replace another damaged one, producing another saving.

The benefits of this program have been considerable. As each unit was



Chain gate requires 210 ft of chain, weighs under 100 lb. Cost of material is \$37.50. Labor costs in building and installing run around \$35

converted from steel doors to chain gates its maintenance costs dropped. Chain gates are not subject to the accidents that happen to other kinds of doors and not a single chain gate has had to be replaced. Such repairs as they have needed have been slight, and in no case has the cost been more than \$25. And the problem of purchasing the materials for chain gates is a lot less than that of purchasing sheet steel for there is an unlimited supply of chain available.

Another big advantage of the chain gates has been realized at the docks. When a trailer is equipped with chain gates, it can back right up to any dock without opening the doors first. This one factor has saved hundreds of man hours. It has also saved losses in freight which sometimes tumbles out while the trailer is being backed up with the doors open. Then, too, there are many open docks where the trailer doors must be closed at night or over the weekend. If the trailer is parked between two others this means that it must be pulled out just to close the doors. All this wasted time and effort is eliminated with the chain gates.

To speed up the production of its chain gates we made up a special gig that works on the principle of a curtain stretcher. The vertical chains

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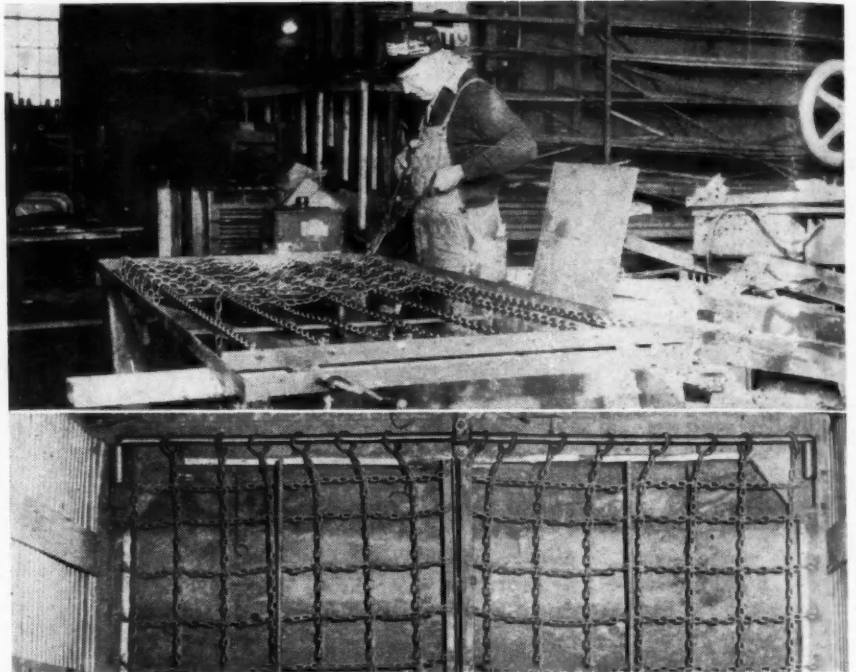
Trailer Tricks . . .

Continued from page 59

Special jig for building gates functions as a "curtain stretcher," enabling chains to be held in place while being welded to side uprights and bottom sill. Below. Rings looped over rail at top permit easy opening and closing of gate. Center posts hold gate rigid

are first cut to length and then secured to hooks at either end of the framework. One holding member is movable so that gates of different sizes can be made. Once the vertical chains are secured the cross chains are laid in place and one link cut at every point of contact with the vertical chains. After the split links are slipped over the corresponding link on the vertical chain it is an easy matter to weld it shut again.

It is just as easy to close this chain gate from the ground as it is from the dock. Objections arising with small castings falling through have been overcome by adding extra chains across the bottom. At the present time we have 150 trailers equipped with chain gates, and some of them have been in use for four years.



Side Panel Repair Lasts Longer

Another trailer trick originating at Associated Truck Lines



Rotted sections are cut away and new pieces are slipped under the trailer skin, water-proofed, secured with screws

WE have conserved a lot of precious sheet steel in the repairing of side panels which have rotted out at the bottom. Some shops remove the entire panel and replace it with a new one. Other shops follow the more economical practice of cutting away the rotten part and replacing it with a strip of sheet steel perhaps 6 or 8 in. wide. This is economical, but as the usual practice is to put the new piece on the outside of the old panel, trouble frequently develops due to water seeping inside and causing serious damage to the body parts.

We place only the bottom of the panel. The bottom of the old panel is cut away slightly above the rotten portion, with electric shears. Next the inside is thoroughly cleaned out and inspected. If any body members

are rotted out, they are repaired by welding. When this is completed, the entire inner surface is coated with aluminum water proofing applied with a brush. Most repairs require strips of sheet steel in 6 in. 8 in. or 10 in. widths, and these are cut by the men during slow times. As the next step in the repair of the panel a strip of the proper width is slid under the old panel so that it functions the same as the shingles on a roof. More waterproofing is applied at the joining between the old and new pieces before they are screwed together. The men also lap the forward strips over the one behind it so that the forward motion of the trailer does not force water between the joints. When completed a repair job like this will last a long time.

Plywood Lining Cuts Costs by 30%

By Russell Oliphant, Supt. Body Shop, Union Freightways



Old aluminum panels deteriorated like this (right) within three years. New techniques in insulating, firring and replacement with plywood panels inside the trailer body takes about 50 man hours

WE ARE using plywood to replace the aluminum lining on some 300 semi and full refrigerator trailers in our fleet. Most of these are of the 32-ft class.

While our first consideration in changing from the aluminum to the plywood lining was the protection of our customers' loads, we have found a considerable cost savings advantage in the plywood lining, which is running us from 25 to 30 per cent less per trailer than the aluminum lining, and the repair cost on the plywood lining is much less than on the aluminum lining.

For many years we have been buying most of our trailers stripped (just the shell) and doing the insulating and lining in our own body shop. When we first started doing this work ourselves, we used corrugated aluminum for our linings. However, we found that 3 years was the maximum life we received on any of the aluminum linings, and most of them had to be replaced at between 12 and 18 months. Also we were not satisfied with the way the aluminum lined trailers were holding up refrigeration on our perishable loads.

We decided to run a series of tests. For insulation we had been using fiber glass. We substituted other types of insulating material but found that we obtained best results from the fiber glass. From these tests we were convinced that it was not the insulating material we had been using.

Next we used fiber glass insulation and lined several of our best trailers with Douglas fir plywood, using grade A and B 1/4-in. Plyshield on the sides, front end, and doors, and 5/16-in. on the ceiling. In setting up these test trailers we applied no finish to the plywood because we felt that the odor of the finish compound might be 'picked-up' by such items as fresh meat and poultry, and render them unfit for human consumption. After the tests had been made and we decided to replace the aluminum linings on all of our trailers, we continued our policy of applying no interior finish to the plywood linings.

In fact, we are today still using the identical method of installation we used in preparing these test trailers. As illustrated there is installed

by the trailer manufacturer a section of the floor which extends up about 6 in. from the floor line. This rail or fastening piece is provided by the trailer manufacturer to enable the installation of plywood or other type of lining. The fastening piece is either steel or aluminum, depending on the metal used in the balance of the trailer, is approximately 1/8 in. thick, 6 in. on the rise above the floor level, and about 10 in. wide at the floor level.

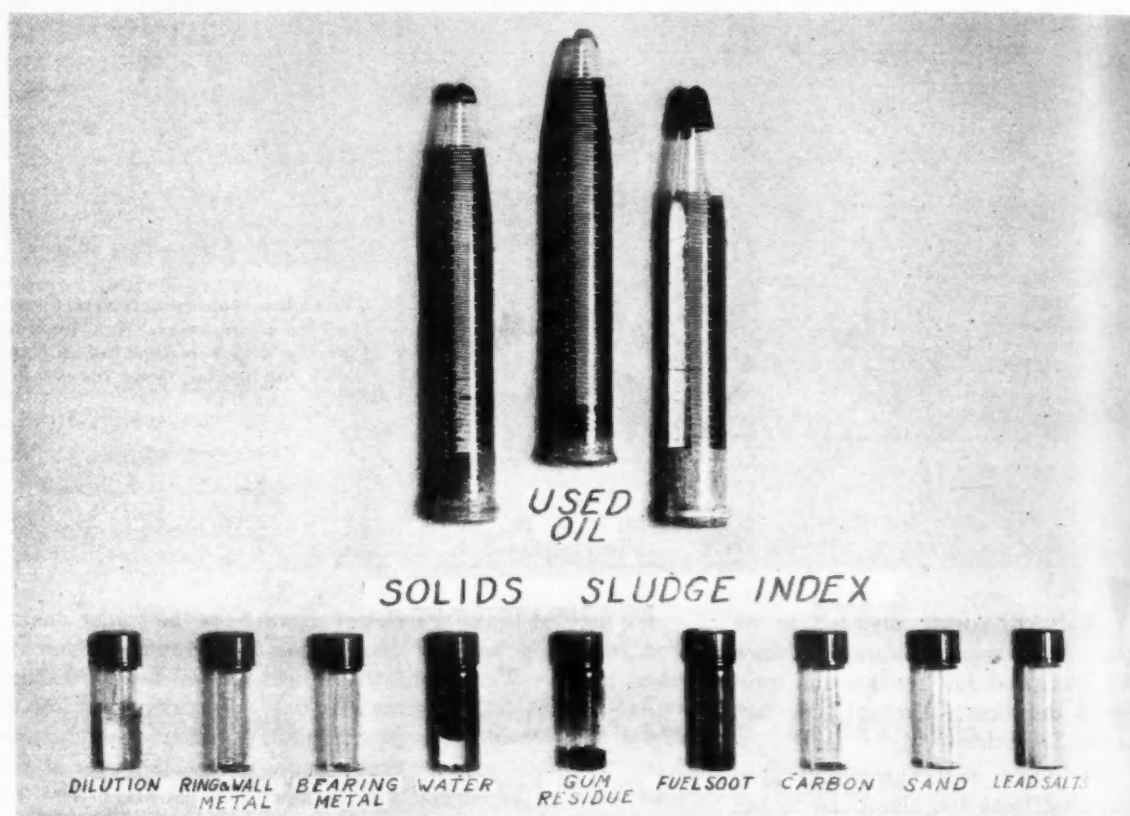
It takes 28 sheets of 4 by 8-ft plywood to line a 32-ft trailer. The plywood is fastened to the ribs in the ceiling and to the ribs in the trailer side parts and along the bottom fastening rail with No. 10 flat-head screws, 1 in. long. Spacing is 7 to 8 in. apart.

When we had completed the change-over on six trailers, using plywood instead of aluminum for the lining, we put the six trailers in use on regular refrigerator runs.

On these same runs, hauling the same type of load (fresh meat, poultry, and other perishable goods) we kept six of the old trailers lined with

(TURN TO PAGE 82, PLEASE)

Used Oil Analysis Guides



A used oil sample is shown in center tube, top. Solids content after centrifuging, left; sludge index after coagulant is added, right. Bottom row of bottles shows what the lab picks up in samples of crankcase oils

Laboratory check of oil samples shows engine conditions from standpoints of wear,

THE ADJUSTMENT of PM schedules to the most economical point consistent with efficient operation is a subject that has not been fully explored by many fleets. Some are lax in scheduling engine work; others are far too liberal. And both may be losing money, for over-maintenance can be equally as expensive as under-maintenance. It is the progressive fleet operator who has developed a PM program that will realize the ultimate in parts life, the

minimum in lay-up time, the lowest outlay in time and labor, and the most economical operating performance.

Fortunately, there is a relatively simple and inexpensive method of locating the best PM points for the particular operation. Laboratory analysis of the crankcase oil can aid materially in adjusting engine maintenance to the peculiar requirements of the fleet. The Faber Laboratories, with offices set up in at least five

cities across the nation, provides one of the most widely known service of this type. Similar facilities, however, are available locally so that oil analysis and corresponding recommendations with respect to engine tune up, service, adjustments and part replacement are within the reach of every fleet operator.

Faber's program calls for samples of the crankcase oil from each vehicle to be sent to the laboratory in 2½ oz bottles on either a 30 or a 60-day

S

By M. K. Simkins
Commercial Car Journal

Left. A 3-month report to Montreal Tramways on diesel engines shows that drains were requested in about 17% of the cases. Abnormal fuel dilution, abnormal viscosity followed in frequency. Corrective measures recommended by Faber caught many abnormalities before trouble occurred.

CUSTOMER
MONTREAL TRAMWAYS,
Montreal, Canada

FABER Laboratories

PERIODIC DIESEL SURVEY

PERIOD
Months of Oct., Nov. & Dec. 1951

Previous Survey

	0	10	20	30	40	50	60	70	80	90	100% of Tests
6.75 DRAINS REQUESTED											
10.6 FILTER CHANGES REQUESTED											
2.1 ABNORMAL FUEL DILUTION											
6.5 ABNORMAL OILS											
0 ABNORMAL BEARING METAL											
0 ABNORMAL RING & MALL METAL											
0 ABNORMAL WATER											
0 ABNORMAL GUMS & TARS											
2.1 ABNORMAL FUEL SOOT											
0 ABNORMAL CARBON											
0 ABNORMAL DIRT & SAND											
4.3 ABNORMAL VISCOSITY											
4.3 ABNORMAL SLUDGE INDEX											

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AUTOMOTIVE CONTROL BY OIL ANALYSES

FABER Laboratories

188-188 Lafayette Street • New York City 11 • WITCO OIL CO.

TEST VEHICLE NUMBER	Fuel	WATER	SLUDGE INDEX	FABER OIL	COND.	METAL	WATER	COND.
104	1.0	2.0	1000	x	x	x	x	x

ENGINE SLUDGE INDEX 1.0

12/14/51 Sludge depositing, ring sticking & logging oil ring slots, improper Replaced VACUUM SPARK ADVANCE TUNE

104	1.0	2.0	200	x	x	x
ENGINE SLUDGE INDEX 2.0						

1/14/51 Sludge forming, improper combustion
TUNED ENGINE — FRED W. H.

104	1.0	1.0	200	x	x	x
ENGINE SLUDGE INDEX 1.0						

2/14/51 Sludge forming.
REPLACED FILTER CARTRIDGE

104	1.5	0.8	200	x	x	x
ENGINE SLUDGE INDEX 2.0						

85-3

Right. Vehicle No. 164, of Green Spring Dairy was sludging on first test. Lab recommended a purge, oil change, filter service. Next 30-day period showed substantial improvement but sludge was still forming. With filter service and improvement of combustion efficiency sludge index was reduced from 4.0 to .06 over this period and potential engine failure was caught

[illegible]**adjustments and operating conditions.**

schedule. Here they are subjected to a series of tests which show fuel dilution; solids and sludge index volume; operating oil viscosity; foreign matter such as metal, gum, water, tars and residues; fuel soot, free carbon and dirt or sand; crankcase operating temperature. From these indications the laboratory is able to predict with surprising accuracy tendencies toward ring fouling, piston scoring, ring wear, bearing breakdown, and other failures that would not normal-

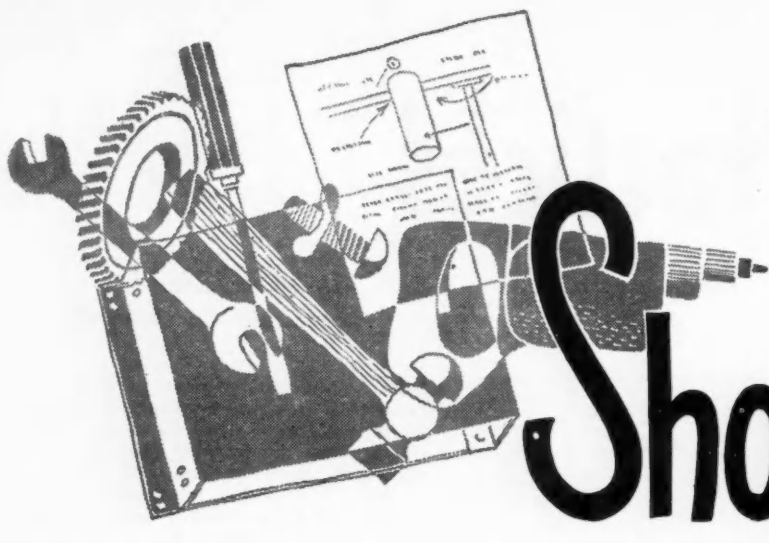
ly be caught before the next scheduled overhaul.

The Faber Laboratory tabulates results of these tests, returns promptly reports with corresponding suggestions for fleet action. A complete picture of the fleet is kept on Faber records so that individual engines can be watched and results of remedial action on the part of the fleet can be followed. When a particularly dangerous condition is found, the laboratory may wire the fleet im-

mediately, suggesting that that particular engine be checked before the damage causes further complications.

It should be emphasized that the purpose of these reports is not to tell the operator when to overhaul his engines. In this respect the service does not supersede or take the place of fleet records. The reports will show which engines will require an overhaul prematurely because of some internal or operating fault. Without such a report the engine might run indefinitely at a prohibitive operating cost due to conditions that would not normally be found until it is due for a scheduled overhaul.

(TURN TO PAGE 118, PLEASE)

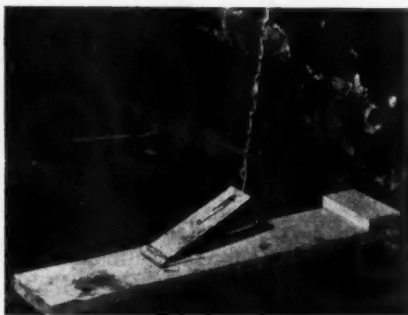
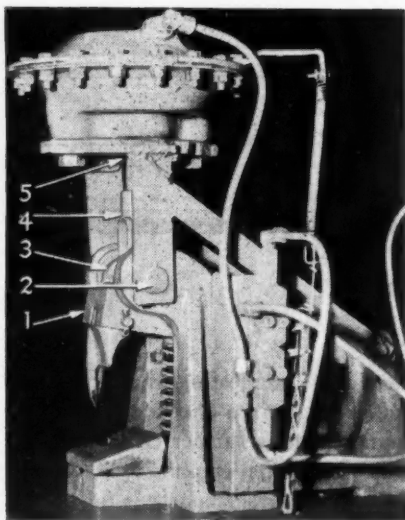


Shop Hints

HINT OF \$25 THE MONTH

Chain Tool Becomes Air Operated

by Walter R. Fox,
Wheeling Electric Co., Wheeling, W. Va.



We made a Weed No. 213 chain tool air-operated by using two air horn valves, a 9-in. brake chamber, and odd scrap parts. First we cut off the operating handle (1), and replaced the shaft with two pins (2), large enough to support the drum assembly. Then we drilled and welded a triangle of $\frac{3}{8}$ in. steel to the operating arm (3), aligning it with the clevis pin (4). The air drum was bolted to a steel plate which we welded to the support arms (5). A brace, made of the pivot shaft of the original handle was attached to each support arm and secured through the pin at the rear of the frame. The two horn valves were connected together, one above the other. By depressing the foot treadle, made of a common strap hasp, the lever arrangement closed the exhaust or top horn valve and opened the lower or inlet valve, operating the tool. Two things were essential in setting up this tool. First, alignment of the triangle on the operating arm with brake cylinder clevis pin. The other, is making sure that the brake cylinder is parallel with the base.

While this is a seasonal tool, only used during snow and ice periods, similar adaptations of lever tools may be made, using the two air horn valves, one as an inlet, the other as an exhaust, and operating the machine with a brake cylinder. Incidentally, the foot treadle was connected to the operating lever by common utility chain and the exhaust valve was kept open by a common machine spring attached to the drum.

1. Stud Removing

by Thomas J. Gilligan
Gulf Oil Corp.
Freeport, N. Y.

To remove a stud that has been twisted off flush with the block, lay a flat steel washer on top of the stud, arc weld a pass around the inside of the washer, on top of the stud. Lay a common hex nut on the washer and tack-weld in a few places. Turn off the stud with a hand tool.

2. Door Guard

by John E. Vallerie
Vallerie's Transportation Service
Norwalk, Conn.

I've seen some bad injuries resulting from leaving cab doors open while working under the truck, by standing up from a creeper under the sharp edge. Two types of door guards may be made that will prevent this, one of plywood with hooks for tools, the other of canvas with loops and pockets. Both clip to the door edge with alligator clips.

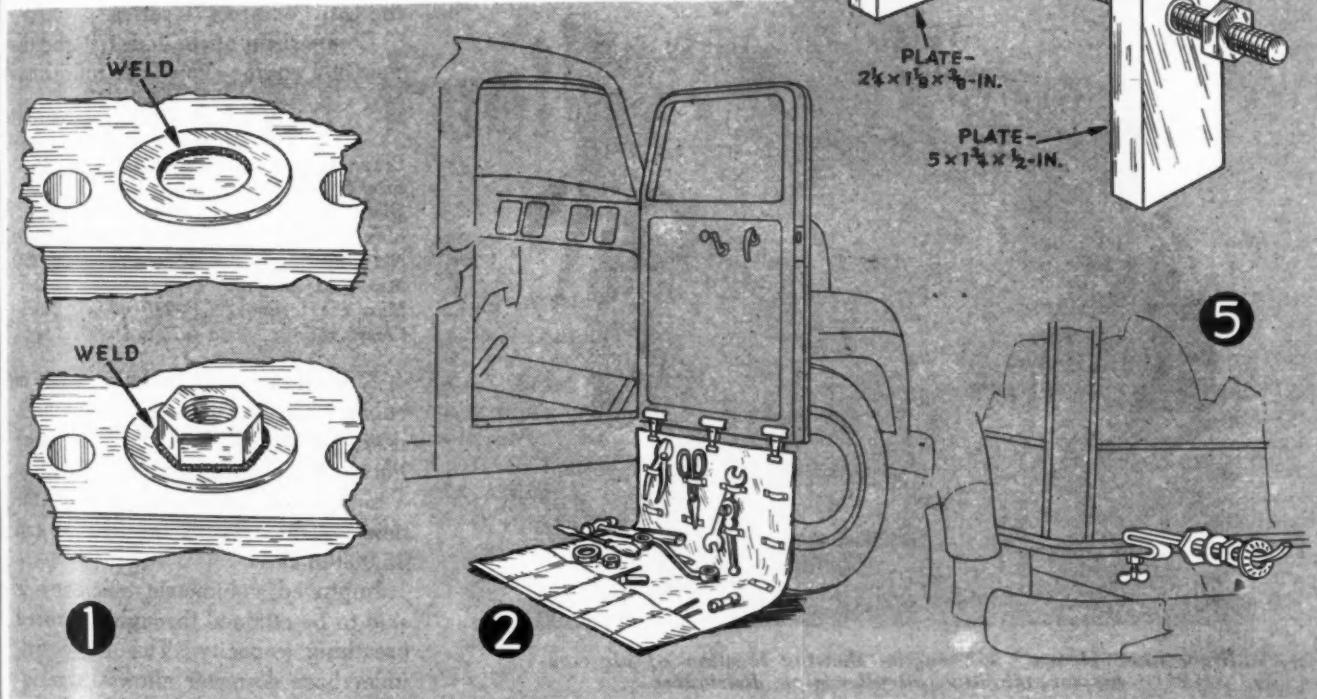
3. Tire Measuring Tool

by Merrit J. Johnson
O'Connor's Express
Harrison, N. J.

To speed up matching of dual tires, this device may be used for measuring the outside diameter. It is made from four pieces of $\frac{1}{2}$ -in. pipe cut 15 in. long with a $\frac{1}{2}$ -in. union. This union is cut in half and drilled for wing screws as shown. Insert a $1\frac{1}{2}$ in. brake rod about 30 in. long and adjust to size for matching.

CCJ pays **\$10** for each shop hint published; **\$25** for what editors consider exceptional. Is your name here? Let us hear from you with your suggestion for a new tool, new technique, shop-designed or home-made gadget that will assist other mechanics in vehicle maintenance.

FROM FLEET SHOPS



4. Seal Puller

by Charles Stauber
Sheboygan, Wisc.

I had an occasion to remove a rear wheel grease seal which was still in good condition. I made a puller in about 15 minutes that did the trick, by drilling a 5-in. piece of 1/2-in. plate to fit a 3/8-in. bolt. Then for the pulling end, I used a piece of plate 2 1/4 in. long, drilled and countersunk so that it would pivot on the bolt. A 1/8-in. hole, drilled across the pulling end holds a cotter pin that keeps the bolt in place. The seal is pulled by tightening the nut with a wrench.

5. Parts Holder

by John Shramko
New York, N. Y.

When doing brake jobs on rear wheels, there is no place to put the bearings, nuts, washers, etc. A pan is generally in the way. A handy bracket made of flat stock 1/8 x 1 1/4 x 13 in., bent to fit around the skirts of the body. A hole drilled on the underside with a 1/4-in. USS nut tack-welded on permits the use of a wing bolt to work as a clamp. The outer end of the bracket was turned up to prevent the parts from slipping off. A small tin tray tacked to the bracket will hold other parts, tools, etc.

6. Oil Cartridge Flare

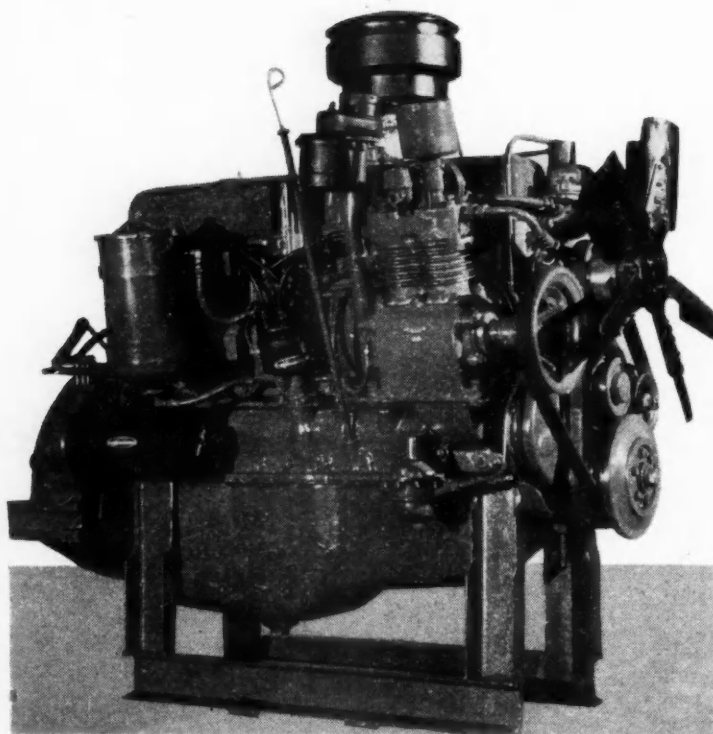
by James Heminger
Elkhart, Ind.

I carry a used oil filter cartridge as a flare, the top of which can be removed, beforehand or when needed with a can opener or similar tool.

The waste material being soaked with oil, will burn for approximately 45 min. in a strong wind, ample time to change a tire, or other repair. They can also be ignited in strong wind with a single match and give off considerably more light than the ordinary flare. The used cartridge can be stored in an old can to keep it from oozing.

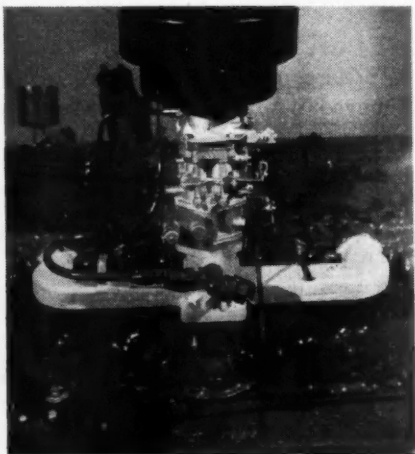
GMC Introduces . . .

- New 302, 145 HP Engine
- Design Changes
- New Diesel Models

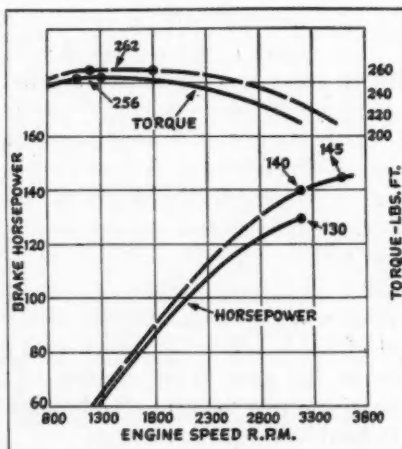


Right hand view of 302 engine showing location of air compressor, oil filter, oil filler pipe, distributor

The new duplex carburetor with larger throat area provides for good fuel atomization at all engine speeds



Performance curves of the 302 engine. Full lines represent net output with accessories; dotted lines bare engine



GENERAL MOTORS Corp. has introduced a new 302 cu in. engine basically of the same heavy-duty construction as the 228, 248 and 270 series. Developing 145 hp at 3600 rpm, this model is a square engine with a 4-in. bore and a 4-in. stroke. Compression ratio has been upped from the previous 6.75 to 7.3 to 1. The 302 replaces the former 270 in the GMC 450 to 470 series.

Comparison of the old 270 and the new 302 engine shows the following:

	270	302
Bore, in.	3 25/32	4
Stroke, in.	4	4
Disp., cu in.	269.5	301.6
Max G Bhp	120@3600	145@3600
Net Bhp	106@3200	130@3200
Max gross torque	222	262
Max net torque	216	256
Comp. ratio	6.75 to 1	7.3 to 1

With a 12 per cent increase in cubic inch displacement this engine develops up to 23 per cent more horsepower at the clutch, providing a high power to weight ratio for the new 450 models, in the 21,000 and 45,000-lb class.

Improved volumetric efficiency is said to be attained through improved breathing capacity. The large cylinder bore diameter allows large intake and exhaust valves. The duplex carburetor provides good fuel atomization at all engine speeds. The short stroke of this engine makes possible a piston speed 8.6 per cent slower at any given rpm. This reduced piston speed, coupled with trans-slot aluminum alloy pistons and low-friction chrome plated top piston rings, is said to provide for an increase in mechanical efficiency. "Built in" mechanical octanes through the use of improved cylinder head and piston contours, valve and spark plug locations reduce spark knock tendencies and make possible the use of a higher compression ratio with regular grades of gasoline.

(TURN TO PAGE 126, PLEASE)

COMMERCIAL CAR JOURNAL, May, 1953



Miles per gallon study reflects effects of weight and distance; diesels average 30% better mileage than gasoline powered vehicles

Survey No. 23

Fleet Fuel Consumption

For the first time, COMMERCIAL CAR JOURNAL's Board of Experts have devoted their attention to fuel consumption. Obviously it is a study that must be held closely within vocational, weight and type-of-service limits. But it is believed that the data presented here, gathered from virtually all vocational activities will be of real interest to fleet operators.

THE EFFECT of multiple stops on gasoline consumption is reflected by the general trends in all weight classifications and for all vocational groups in Table No. 1 and No. 2. The local fleet operators consistently show lower average miles per gallon than the over-the-road operators, except in the two high weight classes. This deviation from the general trend can only be the result of heavier trucks within the class interval having been considered in the data. This reversal of trend however is only in Food Distribution Group.

There is a wide variation between the vocational group for each weight class as would be expected. Table No. 1

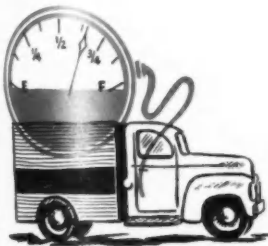


Table 1 Fuel Consumption in Local Fleets

VOCATIONAL GROUPS	GASOLINE									
	Up to 10,000 lb GVW		10,001-16,000 lb GVW		16,001-19,500 lb GVW		19,501-26,000 lb GVW		26,001 lb GVW & Up	
	Range	Average MPG	Range	Average MPG	Range	Average MPG	Range	Average MPG	Range	Average MPG
FOR HIRE	6.0 - 8.1	7.1	4.0 - 7.0	5.4	3.5 - 3.6	3.5				
FOOD DISTRIBUTION	6.9 - 13.5	9.5	6.5 - 10.0	7.8	4.0 - 8.5	6.6	5.5 - 6.7	6.0	3.7 - 7.0	5.0
GOVERNMENT	6.0 - 15.0	9.4	4.5 - 10.0	5.9	5.0 - 12.0	6.7	2.5 - 8.0	4.7	2.0 - 9.0	4.2
CONSTRUCTION	8.0 - 11.5	9.7	7.0 - 8.3	7.6	6.5 - 7.1	6.8	4.0 - 5.7	4.9	2.2 - 4.0	3.3
RETAIL DELIVERY	7.0 - 13.0	9.5	5.0 - 10.0	7.1	4.0 - 8.3	6.1	3.5 - 7.0	5.6	2.5 - 4.0	3.2
TOTAL ANJ AVERAGE ALL VOCATIONAL GROUPS	6.0-13.5	9.0	4.0-10.0	6.7	3.5-12.0	6.0	2.5-8.0	5.3	2.0-9.0	3.9

Fuel Mileage

Fleet Fuel Consumption

Continued from Page 67

indicates Construction obtains the highest miles per gallon, undoubtedly because of longer runs and fewer stops. A typical construction truck run would have no scheduled intermediate stops except those occasioned by traffic, while Food Distribution might make an average of five to a city block.

Table No. 2 indicates that over-the-road and local food haulers get the best miles per gallon out of their trucks in all weight classifications including diesel powered vehicles. This is probably due to the bulk vs weight per cubic foot characteristic of most food products, which would be reflected in light weight payloads and large size hauling equipment. This combination would probably result in such equipment being operated at less than the manufacturer's G.V.W. rating and therefore relatively high gas mileage

should be expected for a weight classification based on G.V.W.

The relationship between MPG for diesel and gasoline powered vehicles within the same weight classification shows approximately a 2-3 ratio, which is consistent with the exception of the Government group. The explanation for this variation is easily made by the fact that most government owned diesel powered units are used for road maintenance and snow plowing where such conditions exist. These factors would definitely cause low MPG as is shown in the table.

Table No. 3, for bus operation, indicates approximately the same ratio between MPG for diesel and gasoline powered vehicles as Table No. 2. The 2-3 ratio designates that a diesel engine burns approximately one-third less fuel per mile than does a gasoline engine when considered on a comparable G.V.W. and operating condition. By this is meant the approximate same number of stops per trip, travel over similar grades and road surface conditions and having approximately the same payload.

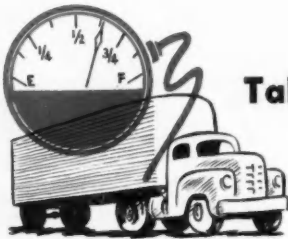


Table 2 Fuel Consumption in Local and Over the Road Fleets

VOCATIONAL GROUPS	GASOLINE										DIESEL			
	Up to 10,000 lb G.V.W.		10,001-16,000 lb G.V.W.		16,001-19,500 lb G.V.W.		19,501-26,000 lb G.V.W.		26,001 lb G.V.W. & Up		19,500-26,001 lb G.V.W.		26,001 lb G.V.W. & Up	
	Range	Aver. MPG	Range	Aver. MPG	Range	Aver. MPG	Range	Aver. MPG	Range	Aver. MPG	Range	Aver. MPG	Range	Aver. MPG
FOR HIRE	6.5-12.0	8.8	2.8-7.5	6.4	5.0-6.0	5.9	3.2-5.6	4.7	2.4-6.0	3.8	5.7-7.0	6.4	5.0-6.7	6.1
FOOD DISTRIBUTION	6.5-16.0	14.0	5.0-12.0	10.5	3.2-9.0	8.5	3.3-8.0	7.0	2.5-5.8	4.7	.....	.....	5.2-8.9	6.8
GOVERNMENT	8.0-15.0	12.0	4.5-14.0	8.1	3.1-11.0	7.5	2.8-9.0	5.5	2.1-7.0	4.1	.....	.....	2.8-8.0	4.7
INDUSTRIAL (Private Carrier)	.....	.....	.....	.....	4.1-7.2	6.0	4.5-5.8	5.0	3.5-4.4	4.0	.....	.....	.....	.....
PETROLEUM	9.8-12.0	11.8	7.7-11.0	9.7	6.0-10.0	7.6	4.0-8.0	5.3	3.5-5.0	3.9	.....	.....	5.4-7.0	6.2
PUBLIC UTILITY	8.3-14.0	10.5	4.6-10.0	7.6	3.6-6.5	5.0	3.0-5.5	4.0	2.5-5.0	3.1	.....	.....	.....	.....
TRUCK RENTAL	8.1-10.5	9.6	6.4-10.7	7.8	5.9-8.8	6.9	5.0-5.1	5.0	3.4-3.5	3.5	.....	.....	.....	.....
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	6.5-16.0	11.1	2.8-14.0	8.3	3.1-11.0	6.8	2.8-9.0	5.2	2.1-7.0	3.9	5.7-7.0	6.4	2.8-8.9	5.9



Table 3 Fuel Consumption in Bus Fleets

VOCATIONAL GROUPS	GASOLINE								DIESEL			
	Up to 27 PASSENGERS		28-31 PASSENGERS		32-35 PASSENGERS		36 PASSENGERS AND OVER		32-35 PASSENGERS		36 PASSENGERS AND OVER	
	Range	Average MPG	Range	Average MPG	Range	Average MPG	Range	Average MPG	Range	Average MPG	Range	Average MPG
BUS FLEETS	4.0 - 6.5	5.1	3.4 - 6.0	4.5	3.6 - 4.2	3.8	3.1 - 4.2	3.5	5.1 - 6.2	5.8	4.5 - 6.0	5.1

GVW—Gross Vehicle Weight. MPG—Miles per Gallon.

Composition of Vocational Groups as Used in the Accompanying Tables

FOR-HIRE CARRIERS—Motor Freight Carriers in Local and Over-the-Road Service.
FOOD DISTRIBUTION—Bakery, Dairy, and Other Food Products fleets.
GOVERNMENT—State, County, Municipal, and Federal fleets.
CONSTRUCTION—Building, Quarry, and Gravel fleets.
INDUSTRIAL—Fleets operated by manufacturers.
PETROLEUM—Production and Distribution fleets.

PUBLIC UTILITY—Gas, Power, Water, and Telephone fleets.
RETAIL DELIVERY—(Other than Food Products) Dry Cleaning, Laundry, Newspaper, Coal, Ice, Department Store, Beverage fleets.
TRUCK RENTAL—Agencies leasing motor trucks.
TRUCK AND BUS FLEETS, MIXED—Passenger carriers operating own fleets.

based on gasoline on shows ne excep for this vernment ntenance these fac n in the oximately line pow tes that a fuel per red on a y this is rip, travel nd having

Fleets

26,001 lb VW & Up

mpg	Aver. MPG
6.7	6.1
8.9	6.8
8.0	4.7
7.0	6.2
8.9	5.9

ASSENGERS ND OVER

e	Average MPG
6.0	5.1

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AL, May, 1952

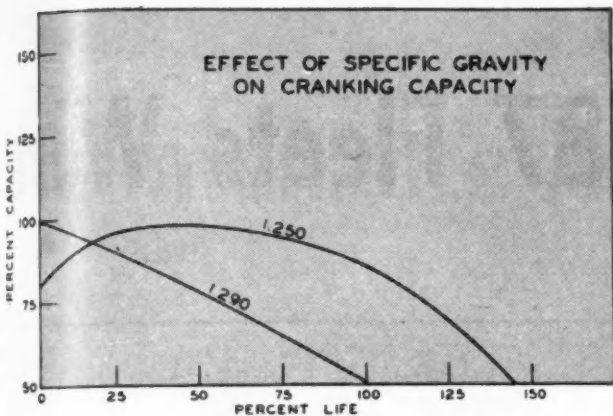


Fig. 1. The effect on life of the use of lower specific gravity

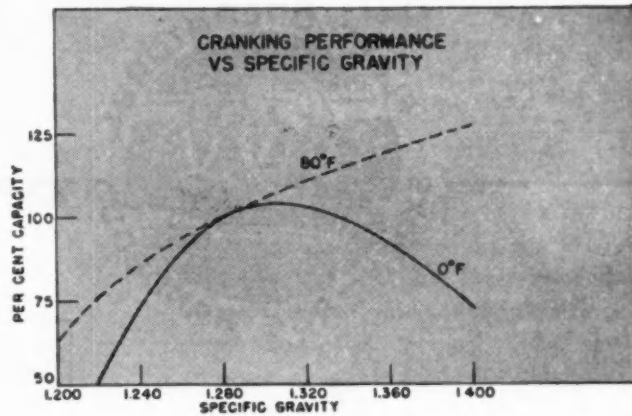


Fig. 2. Comparison of cranking performance at various gravities

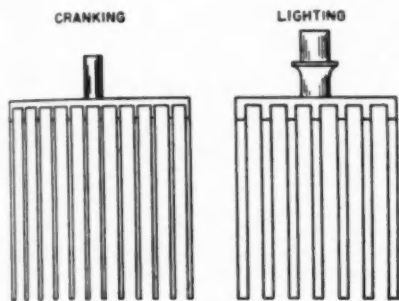


Fig. 3. Maximum plate area achieved with a large number of thin plates, is required for cranking; lighting requirements can be met with small number of thicker plates

By L. E. Wells *

The Electric Storage Battery Co.

THE battery problem, as we see it, might be expressed:

Initial Cost + Maintenance Cost

Tons × Miles × Months

or, in other words:

Design and Upkeep

Service Rendered

since initial cost is largely controlled by design, and since ton miles and time in service may be expressed in single units of service.

We are often asked the question, How large a battery should be used for this installation? This is a good deal like the question, How much insurance should I carry? or How much contingency reserve should I carry in my books? In the case of a battery, these contingencies are the provision of reserve capacity against extreme low temperature operation, against operating in partially charged condition; contingencies against poor

maintenance and servicing. In addition to the reserve contingency in terms of ampere hour capacity, there is also the reserve contingency of maximum quality and general reliability of the product involved. Let us now consider each of these essential elements in the equation with a view to determining their relative value and importance, the first consideration being design.

The battery operates as a stand-by power reserve and the first job, chronologically, is to start the car. The second job is that of powering the lights and accessories during idle and parking periods; in other words, furnishing the power during the period when the engine is not operat-

ing, or is operating below cut-in speed. This is a question of furnishing power at relatively low rates in amperes for considerably longer periods of time than are involved in starting. This is the factor which in a large measure establishes the quantitative values in setting the battery's design. In other words, it is this set of characteristics which partially determine how many pounds of lead are going to be required to produce this unit. Thus, in a broad sense, we may say that Item 1 establishes the qualitative characteristics of the battery, and Item 2 the quantitative characteristics.

And fourth, the life consideration.

(TURN TO PAGE 138, PLEASE)

*Excerpted from a paper presented at the AGA and EET Meeting in Philadelphia, April 7-10.

More Miles for Your Battery Dollar

An interpretation of specific battery needs for any given installation (as outlined here) will pay off in longer life, fewer road failures



87 Fleets Win

Awards of Excellence

F. N. Rumbley Co.,
Fresno, Calif.
Sunland Refining Corp.,
Fresno, Calif.
Carnation Co.,
Los Angeles, Calif.
County of Los Angeles, Calif.,
Los Angeles, Calif.
Knudsen Creamery Co.,
Los Angeles, Calif.
Southern Calif. Freight Lines,
Los Angeles, Calif.
Southern Calif. Gas Co.,
Los Angeles, Calif.
Pacific Intermountain Express,
Denver, Colo.
Connecticut Railway & Lighting Co.,
Bridgeport, Conn.
Savannah Transit Co.,
Savannah, Ga.
Alton Box Board Co.,
Alton, Ill.
Chicago Park District,
Chicago, Ill.
Sears Roebuck & Co.,
Chicago, Ill.
Wagner Baking Corp.,
Chicago, Ill.
Mueller Co.,
Decatur, Ill.
Wesson Co., Indiana Railroad Div.,
Indianapolis, Ind.
Dept. of Conservation, Michigan,
Gaylord, Mich.
Darling Freight Inc.,
Grand Rapids, Mich.
Associated Truck Lines Inc.,
Grand Rapids, Mich.
Holland Furnace Co.,
Holland, Mich.
Consumer Power Co.,
Saginaw, Mich.
Chippewa County Road Commission,
Sault Ste. Marie, Mich.
Peoples Outfitting Co.,
Detroit, Mich.
Minnesota Power & Light Co.,
Duluth, Minn.
Rochester Dairy Corp.,
Rochester, Minn.
Northwestern Bell Tel. Co.,
Minneapolis, Minn.

Northland Greyhound Lines, Inc.,
Minneapolis, Minn.
Purity Baking Co.,
St. Paul, Minn.
Zinsmaster Bread Co.,
Duluth, Minn.
The Chief Freight Lines,
Kansas City, Mo.
Ralston Purina Co.,
St. Louis, Mo.
The Cudahy Packing Co.,
Omaha, Nebr.
Dugan Brothers,
Newark, N. J.
N. J. Bell Tel. Co.,
Newark, N. J.
Iroquois Beverage Corp.,
Buffalo, N. Y.
Niagara Frontier Transit System, Inc.,
Buffalo, N. Y.
City Delivery & Storage Corp.,
Rochester, N. Y.
General Ice Cream Corp.,
Schenectady, N. Y.
Madison County, Dept. of Highways,
Wampsville, N. Y.
Red Top Brewing Co.,
Cincinnati, Ohio

The Cincinnati Gas & Electric Co.,
Cincinnati, Ohio
Kroger Baking & Grocery Co.,
Cleveland, Ohio
Columbus Retail Merchants Delivery
& R.M.D., Inc.,
Columbus, Ohio
Ball Bros. Glass Co.,
Okmulgee, Okla.
American Stores Co.,
Philadelphia, Pa.
McGrady-Rodgers Co.,
Pittsburgh, Pa.
County of Allegheny,
Pittsburgh, Pa.
Hertz Drive-Yourself System,
Reading, Pa.
The Mason & Dixon Lines Inc.,
Kingsport, Tenn.
Collett Tank Lines,
Salt Lake City Utah
Virginia Elec. & Power Co.,
Richmond, Va.
Brooks Transp. Co.,
Richmond, Va.
Jefferson County Highway Dept.,
Jefferson, Wis.

ccj
CERTIFICATE OF EXCELLENCE
James Smith, Inc.

*For Maintenance Practices Excelling National Standards
Established by Commercial Car Journal's Board of Experts*

1951

Bart Rawson

M. Simkins

n Maintenance Awards

Certificates presented to those fleets showing by their records superior maintenance practices as depicted through CCJ surveys presented during the year

ccj
CERTIFICATE OF MERIT

John Doe Trucking Co.

*For Maintenance Practices in Keeping with National Standards
Established by Commercial Car Journal's Board of Experts*

1951

Bart Rawson

W. Simkins

Awards of Merit

San Diego Transit Mixed Concrete Co.,
San Diego, Calif.
Western Milk Transport,
Pacoima, Calif.
Western Auto Transports, Inc.,
Denver, Colo.
G. Fox & Co., Inc.,
Hartford, Conn.
Chestnut Farms—Chevy Chase Dairy,
Washington, D. C.
Florida Power Corp. & Georgia Power
& Light Co.,
St. Petersburg, Fla.
American Glass Co.,
Chicago, Ill.
H. & W. Motor Express, Inc.,
Dubuque, Iowa
Waterloo, Cedar Falls & Northern RR
Waterloo, Iowa
M. J. Grove Lime Co.,
Lime Kiln, Maryland
P. B. Matric Motor Transportation,
Dorchester, Mass.
Middlesex & Boston Street Ry. Co.,
Waltham, Mass.
Evening News Association,
Detroit, Mich.
Southwestern Bell Tel. Co.,
St. Louis, Mo.
J. E. Faltin Motor Transportation,
Manchester, N. H.
Public Service Co. of N. H.,
Manchester, N. H.

Brunswick Laundry,
Jersey City, N. J.
Pittsburgh Plate Glass Co.,
Brooklyn, N. Y.
Breyer Ice Cream Co., Inc.
Long Island City, N. Y.
City of Buffalo, Dept. of Parks,
Buffalo, N. Y.
John J. Casale, Inc.,
New York, N. Y.
The Cincinnati & Suburban Bell Tel.
Cincinnati, Ohio
The Rubel Baking Co.,
Cincinnati, Ohio
City of Columbus,
Columbus, Ohio
King Farms Co.,
Morrisville, Pa.
U. S. Forest Service,
Philadelphia, Pa.
The Narragansett Electric Co.
Providence, R. I.
South Carolina State Highway Dept.,
Columbia, S. C.
Railway Express Agency,
Houston, Texas
Texas Highway Dept.,
Yoakum, Texas
Colonial Stores, Inc.,
Norfolk, Va.
Virginia Dept. of Highways,
Suffolk, Va.
City of Milwaukee, Bureau Municipal
Equipment,
Milwaukee, Wis.

▼ FOR the second consecutive year, COMMERCIAL CAR JOURNAL pays tribute to the maintenance efficiency of a substantial number of its Board of Experts. In the listings on this and the opposite page are the names of 89 firms whose Fleet Superintendents have earned this recognition through cooperation in the preparation of Commercial Car Journal's Experience Handbook series and who, by their record, have proved that their efficiency is above average as measured by standards which they themselves have set.

Who Are The Board of Experts?

SIX years ago, COMMERCIAL CAR JOURNAL recognized the need for the accumulation of accurate data on Fleet Operating Practices that could be used as standards throughout the industry. This data could not be accumulated by ordinary mail questionnaires and definitely could not be tabulated without consideration of vocational activities. To accomplish the task, COMMERCIAL CAR JOURNAL's Editors established personal contact with a number of outstanding fleet supervisors and discussed the problems with them. Through these individual interviews a program was established and the Board of Experts set up through personal invitation. The Board now numbers several hundred members whose principal function is to cooperate in the completion of highly specialized surveys, which are tabulated in the now familiar form of the Fleet Operators Experience Handbook.

What Is The Experience Handbook?

THE first of these Experience Handbooks series appeared in the April, 1947, issue and concerned shop personnel practices. Interest in it was so

(TURN TO PAGE 136, PLEASE)



A typical propane dispensing service station in the South

LP Gas with a Southern Accent

Southern truckers swing to propane; enjoy lower fuel costs, increased oil mileage, reduced maintenance

VAN ESTIMATED 1000 trucks are roaring around and through Louisiana these days without using a drop of gasoline, and with comparatively little oil, very little maintenance.

The trucks carry pipe, groceries, bread, milk, ready-mix concrete, passengers and miscellaneous freight. Some are on hauls of 50 miles or less; others are on their way from Florida to California, New Orleans to Chicago or Dallas to Mobile. Their "secret," of course, is their use of propane for fuel.

Less than a year ago, Bill Wroten, an automotive engineer, met and

started discussing truck fuel prices with Ben Grayson, manager of the Louisiana Motor Transport Association. The subject was a "sore" one with both. State gasoline taxes in Louisiana are 9 cents a gallon, higher than any other place in the country. Truckers simply had to have a cheaper fuel. LP fuel was cheaper, and because it was a gas and did not "cut" lubricants, oil would need to be changed only every 10,000 miles or so. Too, engine maintenance would be much lower, engine life much longer. The Propane Corporation was organized in an effort to make this fuel available on a wide

scale. Tanks and facilities were erected in New Orleans, Baton Rouge, Alexandria, Opelousas; others were planned in Lake Charles and Shreveport. Armed with maps and figures, they began contacting trucking operators, starting with one of the largest.

The idea panned out. One of the large operators agreed to give the system a trial on a few trucks. Since the new corporation was interested in making money from fuel sales rather than conversions, operators were shown how to make the changes.

The end is not in sight for expansion in this state alone. More and more truckers in other states are

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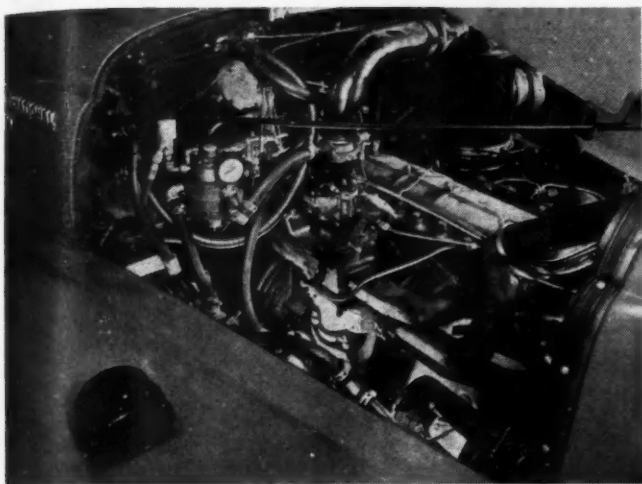
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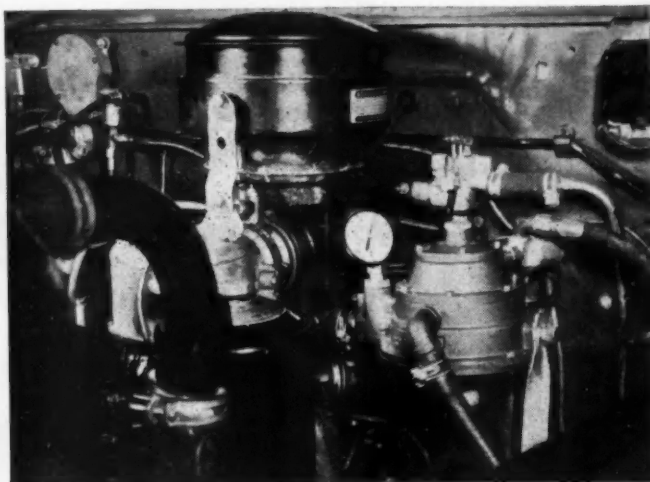
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International truck with engine equipped with Dix converter, high altitude pistons, cold type intake manifold



Ford F-8 with converter. Head was planed .080 in. and heat risers used in intake manifold in this conversion job

using corporation facilities designed primarily for use by Louisiana operators. Now, as the international situation grows more serious, the Baton Rouge business is prepared to take still another step that may, over some night, give it more business than it can count: cheap conversions for passenger cars, in case of gasoline rationing.

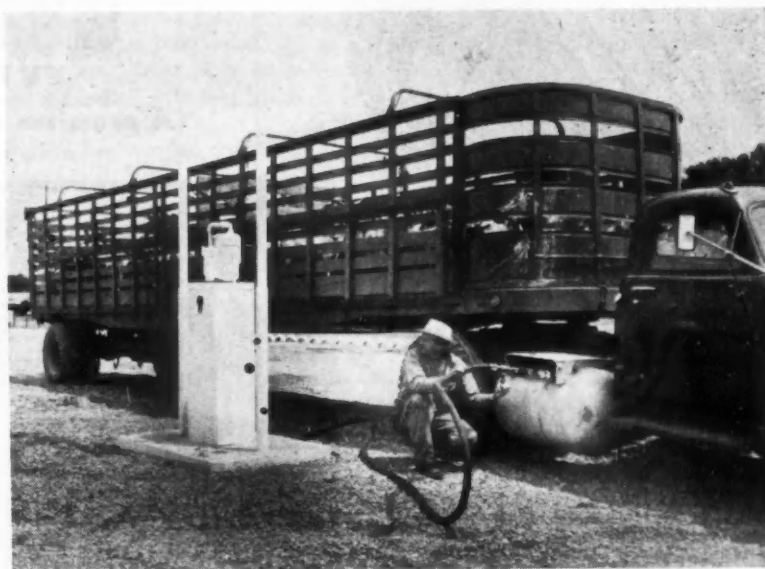
Users Enjoy Benefits

A MAJOR advantage of commercial propane is its lower price. Commercial propane which meets the requirements of the Natural Gasoline Association of America costs 23 cents a gallon in comparison with 32 cents a gallon for regular gas commonly used by truckers and diesel fuel which costs 28½ cents a gallon. Prices cited are service station posted prices in Baton Rouge.

There is little chance that the costs of propane will be increased in view of the fact that the supply of propane is far in excess of anticipated demand. The present propane capacity is 15 billion gallons a year while somewhat less than 3 billion is used for non-transit purposes.

Propane Corporation policy emphasizes the use of combination equipment in order to reduce conversion costs and to assure an auxiliary fuel. It is actually cheaper to make a combination conversion than to convert the truck to solely a propane unit. Better fuel conversions can be made by the use of governors, accelerator

(TURN TO PAGE 106, PLEASE)



Stock trailer (with goats) from Texas pulls up for fuel at Dutch's

England truck, prepares to refuel at the company's storage plant



**NEWEST WAY TO FIGHT
HEAT, FRICTION,
CORROSION, ABRASION**

Sealed Power **KromeX**

FULL-FLOW RING SETS

A premium set for late-model cars and trucks

**Best for
oil control even in
BADLY TAPERED
and
OUT-OF-ROUND BORES!
THE FULL-FLOW SPRING**

CAN'T BLOCK ANY PISTON OIL HOLE

CAN'T BLOCK ANY RING SLOT

TWICE THE USUAL BEARING AREA

- for even distribution of pressure
- for easier starting
- for thousands of extra miles

All rings in KromeX Ring Sets are beveled or tapered to thread-line contact for quick seating and blow-by control.



Nationally famous MD-50 STEEL OIL RING, the only ring with the FULL-FLOW SPRING—now made better than ever with chrome-faced side rails and Granosealed sides of side rails.

Top compression ring of chrome-alloy cast iron, with solid chrome face, factory-lapped to a light-tight finish, and with Granosealed sides.

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST IN NEW TRUCKS

BEST IN OLD TRUCKS

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PUBLICATIONS

FOR YOUR CONVENIENCE USE THE POSTCARD ON NEXT PAGE

L141. Transmission Specs.

Publication of a booklet containing condensed specifications on the entire line of Fuller heavy-duty transmissions and auxiliaries has been announced. The data include number of speeds, type of mounting, whether truck or industrial application or both, gear ratios in which direct and over-drive occur, specific gear ratios, engine size, installation dimensions, weight, location of control, clutch housing size, oil capacity, location of power take-off opening, and relative speed of this take-off to input rpm.

There are also cutaway illustrations of the major types and sizes of both unit transmissions and auxiliaries. For your copy, mark L 141 on the postcard.

L142. Better Arc Welds

A pocket size booklet "Hobart Welding Electrodes and Welders' Vest Pocket Guide," containing useful arc welding information, is now available. This handy booklet gives information on metals and electrodes, types of electrodes, 4 essentials of proper welding procedures, color marking for identifications of electrodes, types of joints, typical positions, standard steel shapes, characteristics of the fillet weld, causes of common welding troubles, average electrode consumption, handy reference information, and complete information and instructions for using all Hobart Electrodes. Send for your free copy. Write L 142 on the postcard.

L143. Better Grinding

This new Landis publication, "Better Grinding," is an 84-page leatherette covered book, with spiral binding, packed with valuable tips on: How to set up grinding jobs; How to operate precision cylindrical grinders; How to take proper care of cylindrical grind-

ers; How to turn out better grinding jobs.

There are 17 chapters devoted to basic grinding facts as they pertain to cylindrical grinders. Over 90 practical illustrations dramatize grinding operations.

This information applies not only to Landis grinders but to any make cylindrical grinder. All of the data is up-to-date and will serve as a guide to higher output from cylindrical grinders.

This publication has been prepared to help train the thousands of new machine operators who have entered industry to assist in the defense program. Your copy is ready. Write L 143 on the postcard.

L144. Brake Data Book

Complete cross-referenced tables showing interchangeability of hydraulic brake master and wheel cylinders for cars and trucks are available in a new edition of a data book published by Mercury Brake Products Co. The tabulations include casting identification lists and manufacturers' parts numbers. For this handy brake reference, mark L 144 on the postcard.

L145. Smoking Notice

Standard Pressed Steel Co., has prepared a booklet, illustrated with cartoons and speckled with jokes and humor, which has provided a positive approach to the smoking problem. They began by permitting smoking all over the plant except where there was a definite fire hazard. The booklet was prepared, pocket size, to acquaint the workers with the "smoking permitted" campaign, giving reasons why there must be restricted areas. This was reinforced by posting a large map in strategic places in the plant which outlined the restricted areas in red. Standard claims that not only has the cam-

paign been successful in eliminating dangerous "butt sneaking" it has kept the smoking areas clean. The booklet is entitled "No Smoking Allowed," with the word "No" crossed out with a red "X". If you could use a copy as a sample for a similar campaign, mark L 145 on the postcard.

L146. Boat Spark Plugs

For the boys in the shop (and office) who are boat enthusiasts, Champion Spark Plug Co. has prepared a data pamphlet which offers handy dope on every known type of boat engine, inboard or outboard, in this country and Canada. The charts show heat ranges of regular and racing type spark plugs with hints on determining the proper type for individual engines. Other information includes specification sheets showing the recommended types of marine spark plugs plus the proper breaker point settings. Get your copy by marking L146 on the postcard.

L147. Body Guide

A free book, "Money Saving Tips on the Care of Your Truck Body," helps find the hidden structural details of any make truck body which need periodic inspection and maintenance. It discusses frame fatigue, parts preservation, how to remedy shrunken floors, correcting warping and how to keep the truck body efficient and safe for highway travel.

The booklet contains a check list, designed to aid the body buyer in selecting the best value. The section lists the various points where a spot-check may be made to determine the quality of the body, and its strength at the point of greatest wear. A diagram shows the construction features. For your copy, mark L 147 on the postcard.

NEW Products

ADDITIONAL DETAILS AVAILABLE UPON REQUEST VIA POSTCARD

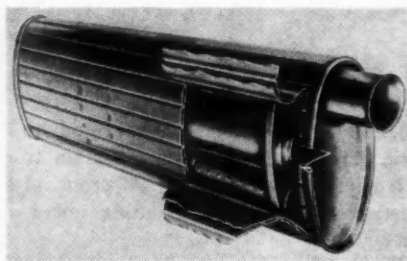


P218. Portable Welder

A portable arc welder, has been introduced for all brazing and welding jobs up to $\frac{1}{2}$ in. steel plate with welding rods up to $\frac{5}{32}$ in. As shown, the welder consists of two cylindrical units, slightly offset, 12 in. long, 6 in. wide, mounted on a base approximately $13\frac{1}{2}$ in. by 15 in., with a metal carrying handle rising in the center. Accessories which come with the set, include a buffing wheel, wire brush wheel, grinding disc, electrode holder, welding cable, ground cable, single groove "v" pulley $1\frac{1}{2}$ in. in diameter, sample electrodes and a welding shield. Known as the "Porto-Weld" model 2-A, the manufacturer is Generator Sales Co., Chicago, Ill.

P219. Signal Flasher

A portable, flashing emergency light that connects to cigarette lighter or dash outlet has been introduced by Auto Lamp Mfg. Co., Chicago, Ill. The light consists of a 5-in., sealed beam, red unit with flasher and a 25-ft. extension cord. The combination hand grip and adjustable rest allows the light to be carried or placed in a convenient spot. A notch and hook are also provided for hanging.



P220. Exhaust Silencer

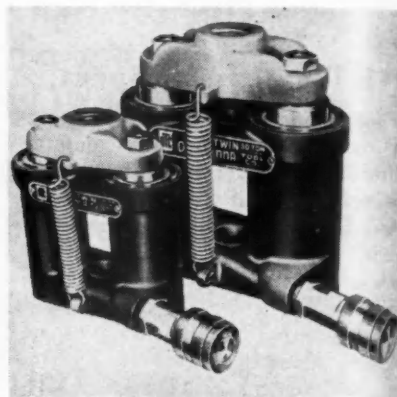
An innovation in sound deadening technique is employed in this muffler which uses the air pockets between the shells instead of a wrapping material such as asbestos. The results, according to the manufacturer, prove as satisfactory as conventionally constructed units. The outer shell, as shown in the cutaway, is ribbed to allow air spaces between the shells. Tests have shown that the various frequencies of sound are absorbed by these air channels. Its construction also eliminates vibration noises often found in regular type mufflers, the manufacturer states. AP Parts Corp., Toledo, Ohio.

P221. All-Purpose Cleaner

A number of eastern fleetmen are greatly impressed with a new cleaning compound known as "4 C's" produced by Four Seas, Inc., Philadelphia. Supplied in paste form it may be used in various stages of dilution for almost any cleaning job from oily cement floors to motor vehicle finishes. In concentrated form it can be used for compounding body finishes and as a cleaner for bright metals.

P222. Exhaust Vents

Underfloor type exhaust ventilators are now being made by the Engwald Corp., Brooklyn, N. Y. Model 1U-52-D is a single underfloor unit which has either 3-in., 4-in., or 5-in. flexible hose. Model U-52 is a twin unit for twin manifolds or use with two vehicles.



P223. Hydraulic Ram

The Owatonna Tool Co., Owatonna, Mich., has a new 30-ton "Power Twin" hydraulic ram similar in design and features to the $17\frac{1}{2}$ -ton ram, but developing almost twice the power.

The new ram weighs 23 lb, is fully adjustable, eliminates torque, the manufacturer states. The ram is $6\frac{3}{4}$ in. high, $7\frac{1}{2}$ in. thick and has a $2\frac{1}{2}$ -in. ram travel. Both OTC rams work from the same size pump which operates by remote control.

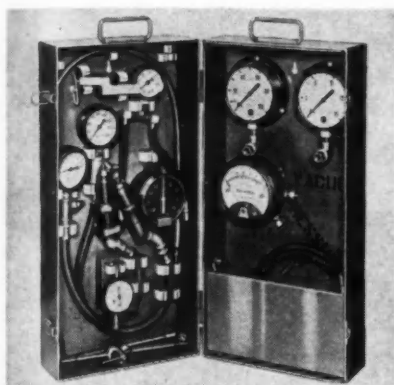
P224. Impact Recorder

A three-way impact recorder has just been announced by the Impact-O-Graph Corp. of Cleveland. This new unit has a light-weight plastic case; a recording stylus bracket which is affixed to the cover which allows for greater freedom of movement by the stylus and a more positive mark on the processed tape; a new non-slip tape drive which rigidly controls the one-inch per hour rate of movement on the tape, plus many other practical features which improve the accuracy and operation of the instrument.

By using impact recorders, shippers can trace down the cause of shipping damage both by the time element (it records the time of shock) and the direction and severity of jolts which the package receives.

The latest developments in parts, accessories, equipment and tools for the fleet shop

FILL IN CARD WITH APPROPRIATE NUMBERS FOR MORE INFORMATION



P225. Test Kit

A new basic diagnosis test kit, has been designed to aid the mechanic when trouble shooting. It is for use on all Series 71 and 6-110 GM diesel engines. Special compression gages are available for each model and a fuel pressure gage for both series.

Available from Kent-Moore Organization, Inc., Detroit, Mich.

P226. Marking Tape

For labeling stock, spare parts, tools, bins, fixtures, etc., Labelon Tape Co., Inc., Rochester, N. Y., has developed a tape that sticks without moistening and may be written on by any semi-sharp instrument. Basically, the tape is a pressure-sensitive film covered with a transparent plastic layer, and it is the pressure of the writing instrument alone that causes the writing to appear. Protected by this outer plastic layer, the writing cannot be smudged, but may be altered, crossed out, or changed.

The manufacturer states that the Labelon tape will stick, and writing on it remains legible over a temperature range of 40 deg below zero to 160 deg F, and is soilproof, waterproof and acid resistant. Rolls of the tape are 400 in. and 800 in. long, and from 1/2 in. to 2 in. wide. The 400 in. standard rolls up through 3/4 in. width are provided with a plastic dispenser with a cutting edge.



P227. Anchor Nut

A self-locking nut that incorporates a new floating anchor principle has been introduced by Kaynar Co., Los Angeles, Calif. The nut consists of a threaded or nut portion which rides free in a retaining shell, providing a radial movement between the nut and the anchoring portion. This facilitates alignment of the nut and the bolt assembly.

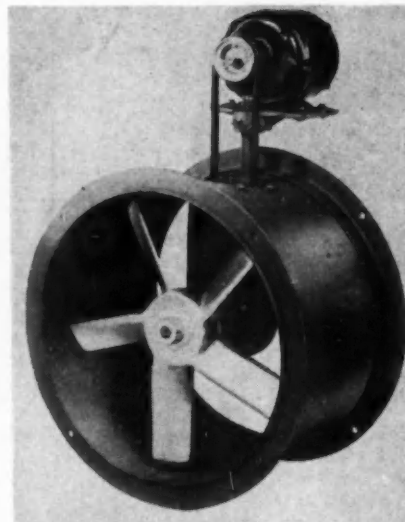
The device is light in weight, made of tough spring steel, and is interchangeable with standard fixed anchor nuts of the same thread size. The design features also include elliptical upper threads which provides greater thread strength and eliminates the auxiliary locking device.

P228. Parts Cabinet

Containing 18 drawers, 18 in. deep, a steel cabinet which has an overall measurement of 14 in. high and 34 in. wide is now available from Equipito division of the Aurora Equipment Co., Aurora, Ill. The drawers, are equipped with two dividers adjustable on 1-in. centers. The cabinets may be placed on top of each other, at a saving in space.

P229. Drain Plug

A remote control unit for draining the crankcase is made by Filtaire Products, Inc., Springfield, Ill. It involves use of a special drain plug. A flexible tube leads from the plug to a lock and a release button located under the hood opens or closes the plug without the necessity of going under the chassis.



P230. Utility Fan

For exhausting dangerous or obnoxious fumes, dirt, etc., Standard Electric has brought out a general-purpose fan combining a number of improvements. These include sealed motor bearings, double-angle motor support, adjustable motor base for fan belt take-up, and a heavier aluminum fan. The fan sizes range from 18 in. to 42 in., and the motors from 1/4 hp to 7 1/2 hp. Standard Electric Mfg. Co., Inc., West Berlin, N. J.

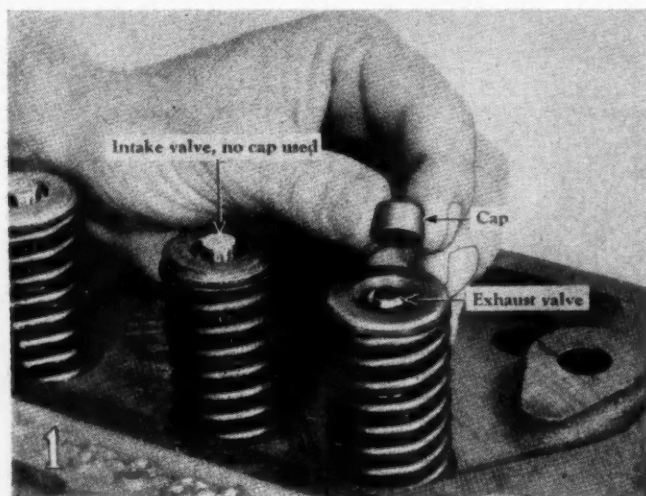
P231. Body Primer

A one-coat metal primer that may be applied by brush or gun has been introduced by Parker Rust Proof Co., Detroit. The manufacturer states that the "Parco Prime" method is new, and the material simplifies body metal preparation prior to painting.

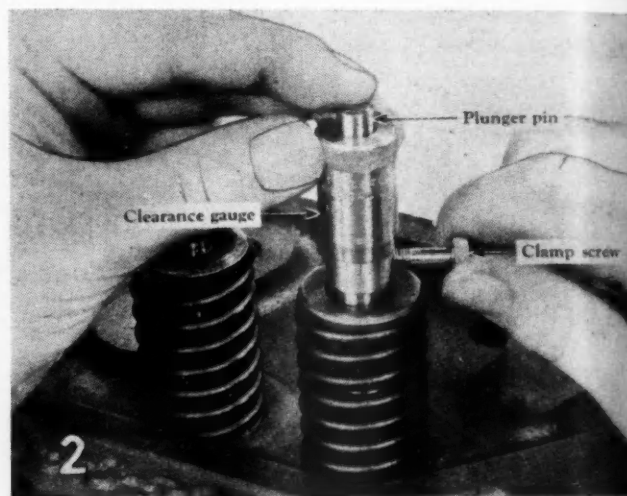
The material contains a rust control property and surface conditioner which the manufacturer claims will react with the metal and form a pigmented phosphate coating which in turn provides a much improved foothold for paint.

(TURN TO PAGE 128, PLEASE)

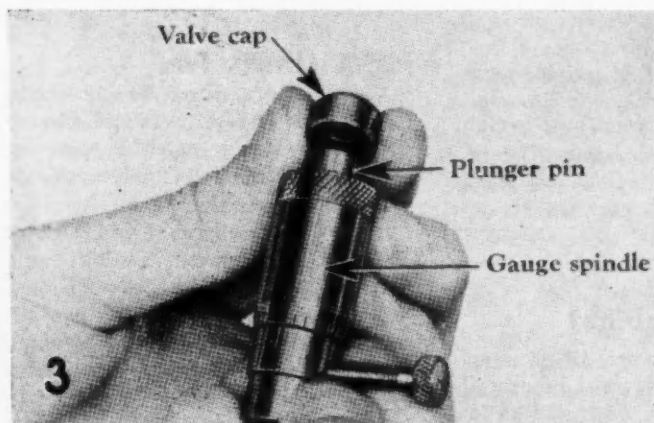
How to Adjust the Rotating Valve



1. To check rotating valve cap clearance using this special clearance gage, first remove the exhaust valve cap.



2. Make sure end of valve stem and gage plunger pin is clean. Place clearance gage on end of exhaust valve stem with gage set at 0. Press plunger pin firmly against valve stem and tighten clamp screw.

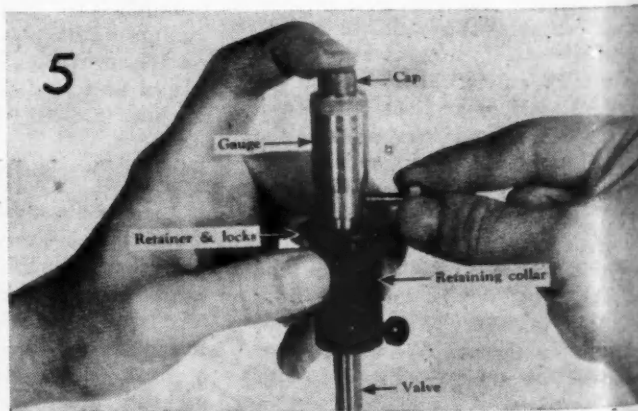
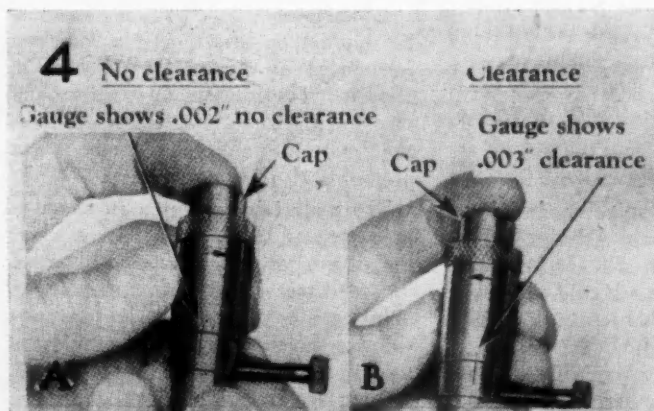


3. Remove gage from stem and place valve cap on plunger pin of gage. The clearance existing between valve stem and cap is now transferred to the end of the gage plunger pin and valve cap and shows in thousandths of an inch on the spindle barrel. Press cap firmly against gage.

4. Turn spindle of gage to right or left until cap bottoms on gage pin and rim of cap just contacts top of gage. Read gage. Readings to right of zero indicate positive clearance and reading to left indicates negative clearance.

5. To check cap clearance with valve steam removed from engine, install retaining collar over valve stem, keys and valve spring retainer under shoulder of valve stem. Position clearance gage on valve stem. Place cap on plunger pin, pressing down firmly. Turn spindle of gage and check reading of gage as outlined above.

Photos and text courtesy International Harvester Co.



American
Trailers

USE

SHULER AXLES



THERE ARE NO BETTER AXLES, AT ANY PRICE!

Since 1915, Manufacturers of: *One-Piece* Tubular and Square Commercial Trailer Axles, Heavy-Duty Front Axles for Trucks, Busses, and Off-Highway Equipment, Low-Bed Machinery Trailer Axles, Heavy-Duty Vacuum and Air Brakes, Miscellaneous Forgings.

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3402 McFarlin Blvd.

EXPORT DIVISION
38 Pearl St., New York

WEST COAST WAREHOUSE
1280 Forty-Fifth St., Oakland

SOUTHWEST WAREHOUSE
301 N. W. 28th St., Fort Worth

NORTHWEST WAREHOUSE
1238 N. W. Glisan St., Portland

1952 New Truck Registrations by Makes by States*

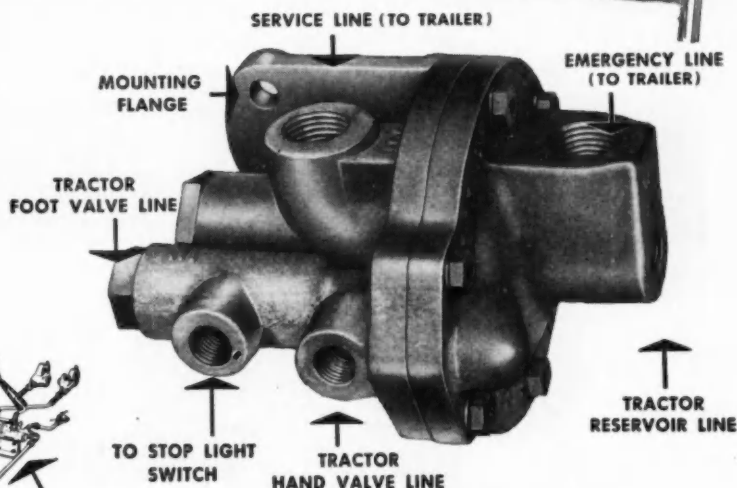
STATE AND MONTH	Auto-car	Brock-way	Chevrolet	Diamond T	Divco	Dodge	Federal	Ford	FWD	GMC	International	Ken-worth	Mack	Peter-bilt	Reo	Sterling	Stude-baker	White	Willlys	All Others	Total
Alabama	Feb. 1	1	439	2	5	146		280		134	82		12		2		46	15	19	1	1,195
2 Mos.	1	1	951	6	6	297		483		266	177		20		5		85	33	54	1	2,386
Arizona	Feb.		83			29		73		30	34				2	14	4		17	1	287
2 Mos.			208		1	90		167		82	75		5		4	14	18		29	10	703
Arkansas	Feb.		420	1		99		255		143	81		1				42	5	11		1,086
2 Mos.			1023	2		238		516		332	193		3				87	7	31	1	2,435
California	Feb.	13	1299	18	11	657	2	845	2	494	381	19	17		12		124	22	97	10	4,025
2 Mos.	23	3	2567	42	43	1360	3	1579	24	989	818	46	38	10	21	1	288	89	210	32	8,188
Colorado	Feb.	1	286	2	1	72		232		98	106	2	14		5		47	4	35	4	909
2 Mos.	1		501	3	4	145	1	402	2	187	214	2	22		7		63	6	73	8	1,641
Connecticut	Feb.	1	107	5	7	63	2	78		31	38		7		3		10	2	13	9	377
2 Mos.	5	6	234	14	15	132	3	181		70	98		20		9		26	8	24	18	863
Delaware	Feb.	2	54	1		19		39		12	11						5	4	4	1	182
2 Mos.	3		136	1	3	38		117		31	33						13	6	5	2	396
Dist. of Col.	Feb.	4	48			37		22		11	13				4			2	3		145
2 Mos.	9		110		1	57		57		18	29				7		1	2	4	2	293
Florida	Feb.	3	444	15	10	252		365		113	169		19		9		97	31	33	19	1,579
2 Mos.	16		927	22	16	518		772		221	296		46		18		193	71	102	31	3,290
Georgia	Feb.		604	9	5	204		349		188	131		10		6		91	11	17	1	1,628
2 Mos.		2	1438	9	9	526		933		427	330		30		9		212	37	52	6	4,029
Idaho	Feb.		101			48	1	78		57	34		2		2		19	1	27		371
2 Mos.			217			89	2	176		113	94	1	6		2	3	34	3	64	1	804
Illinois	Feb.	33	960	46	19	553	2	694		279	541		19		14		113	40	53	19	3,386
2 Mos.	64		1919	73	45	988	4	1328	1	537	952		28		21		199	90	100	32	8,361
Indiana	Feb.	1	424	1	14	181		316		106	208		8		6		79	26	9	7	1,386
2 Mos.	2		904	10	18	400		610	1	211	430		15		12		175	73	28	10	2,899
Iowa	Feb.		375	6	1	125		286		90	186		3		4		40	9	21	8	1,194
2 Mos.			804	11	2	259	1	561		180	392		6		5		91	22	56	14	2,404
Kansas	Feb.		298	3	2	80	1	152		84	113		2		1		17	10	13	3	777
2 Mos.			608	4	4	185	1	390		176	266		2		4		50	18	37	3	1,746
Kentucky	Feb.		381	2	2	128	1	292		112	131		4		2		47	12	33	3	1,190
2 Mos.			796	6	2	262	2	490		254	257		5		3		101	18	61	8	2,285
Louisiana	Feb.		468	5		144		383		164	142		4		2		58	12	29	2	1,413
2 Mos.			745	5	6	225		569		252	202		4		2		88	17	36	3	2,154
Maine	Feb.	1	121	2		26	1	72		45	46		7		2		13	3	25	3	366
2 Mos.	1	1	243	2	1	71	2	174		106	93		13		3		28	6	39	7	791
Maryland	Feb.	5	231	1		92	2	131		34	77		14		5		18	6	8	10	638
2 Mos.	7	6	476	2	6	195	3	292		80	169		29		6		38	18	20	22	1,389
Massachusetts	Feb.	13	4	268	14	11	110	194	1	50	73		26		8		23	21	16	5	837
2 Mos.	27	14	513	26	16	242	2	396	2	131	190		51		17	6	63	48	33	10	1,786
Michigan	Feb.	1	855	8	24	324	7	895		268	172		17		14		49	23	39	14	2,710
2 Mos.	4		1610	16	42	683	12	1501		486	340		25		35		107	39	65	34	4,979
Minnesota	Feb.		409	3	5	100		241	1	87	203		2		4		55	8	22	6	1,144
2 Mos.			771	6	7	217		501	6	189	346		2		8		90	17	40	10	2,190
Mississippi	Feb.		397			96		250		151	93		2		2		53	6	16	4	1,066
2 Mos.			845		2	229		451		341	183		2		1		103	10	35	7	2,209
Missouri	Feb.	3	719	4	8	270		477		232	283		11		6		61	35	19	8	2,125
2 Mos.	3		1323	9	31	486		853		414	470		4		6		116	50	44	8	3,824
Montana	Feb.		134	5		43		101		54	97		5		1		23	3	58		527
2 Mos.			215	7		72	1	183	1	79	157		7		5		41	4	90	1	683
Nebraska	Feb.		297	10		68		223		80	102		14		1		32	5	19	1	887
2 Mos.			569	21	3	134	1	422	5	213	257		16		4		82	20	60	2	1,799
Nevada	Feb.		25			8		12		6	10		1				5				72
2 Mos.			50			36		22		19	23		1				5				172
New Hampshire	Feb.		53		1	23		38		16	29		5				5	3			184
2 Mos.	1	1	101		2	39		68	2	30	49		10		1		11	7	20		342
New Jersey	Feb.	4	11	292	6	14	129	2	221	1	97	124		16		4	28	17	18		792
2 Mos.	8	28	696	14	35	312	3	519	6	243	289		46		11	3	60	50	55	11	2,389
New Mexico	Feb.		144			29		68		93	27		5		1		18	1	12	4	407
2 Mos.			260			56		154		132	75		14		8		32	11	28	5	776
New York	Feb.	9	35	635	33	16	307	8	408	6	187	254		50		29	59	43	48	29	2,196
2 Mos.	32	68	1463	86	30	702	18	1019	11	451	591		144		70	4	120	100	116	67	5,082
North Carolina	Feb.	8		543	4	3	174		323		152	152		30		5	66	43	25	7	1,537
2 Mos.	9		1254	9	10	687		756		307	376		49		7		155	82	53	23	3,776
North Dakota	Feb.		123			47		79		35	100		1				13	1	56	1	431
2 Mos.			264	1		95		219	1	77	255		1				36	1	66	1	1,096
Ohio	Feb.	6	770	13	13	327	5	588		213	324		30		18		92	83	67	21	2,588
2 Mos.	10		1512	27	30	700	8	1148		435	660		55		44		202	176	152	39	5,198
Oklahoma	Feb.	1	589		7	150		421		4	147	203		6			58	41	26	7	1,682
2 Mos.	1		922	1	7	276		628	5	226	291		12		5		79	61	46	7	2,567
Oregon	Feb.		259	13	4	117	1	165		99	102		11		20		23	8	64	19	913
2 Mos.			480	23	9	213	7	323		169	176	14	25		23		37	16	94	24	1,616
Pennsylvania	Feb.	10	34	931	9	23	438	7	536	1	251	376		65		23	107	52	63	16	2,941
2 Mos.	25	63	1721	23	27	809	11	1060	1	434	679		111		38	2	166	121	116	27	5,445
Rhode Island	Feb.		53			24		45		8	28		2				10	6			172
2 Mos.	1	6	100		3	53		95		12	55		7				43	10	10	7	359
South Carolina	Feb.	1	397	1		86		227		86	158		13				80	14	19	13	797
2 Mos.	1		850		2	189		441	2	187	231						20	1	2		1,674
South Dakota	Feb.		103	1	2	34	1	104		20	89		15				33	1	20		767
2 Mos.			197	4	2	75	1	204	1	58	167						67	12	31	1	1,674
Tennessee	Feb.		556	4	3	186	1	430		199	156		27				127	29	61	2	3,089
2 Mos.		21	1034	8	7	385	1	709		374	282		37		10		202	94	136	14	6,142
Texas	Feb.	11		2298	16	8	863		1244		748		13		26		391	231	216	20	11,763
2 Mos.	25		4331	30	15	1297		2590	1	1404	1140		72		2		7	5	11	2	371
Utah	Feb.		139	2	1	35		83		34	40		4				20	11	29	5	741
2																					

New Wagner Air Brake Safety Valve

gives tractor BREAKAWAY protection...

Here is the newest addition to the Wagner line of safe braking equipment for the trucking industry—a safety valve that automatically seals the tractor air system when the trailer is uncoupled.

This valve provides protection to costly rolling stock by preventing damages caused by—improper glad-hand connection... leaking air hose... loss of air in the system... or complete breakaway.

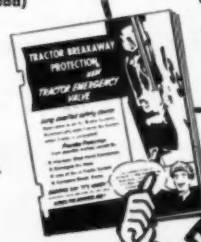


**SIMPLE TO MOUNT—
can be applied to all
vehicles equipped
with air brakes**

A few easy-to-make connections, and the Wagner Tractor Breakaway Valve becomes part of the air brake system. It provides service and emergency air line outlets, and replaces the two shut-off cocks formerly mounted on the truck chassis behind the cab. Now is the time to get complete information on this new valve. The coupon below will bring you copy of Bulletin KU-153. Mail it today.

this bulletin
tells you all
about the

**NEW
WAGNER
VALVE!**



K52-13

Wagner Electric Corporation
6470 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.
(Branches in principal cities in U.S. and in Canada)

Name _____
Position _____
Address _____
City _____ State _____
We operate _____ Vehicles
(NUMBER)

**Wagner Products Serve the
Automotive and Electrical Industries**

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID
NoRoL . CoMaX BRAKE LINING . AIR BRAKES . TACHOGRAPHS
ELECTRIC MOTORS . TRANSFORMERS . INDUSTRIAL BRAKES

COMMERCIAL CAR JOURNAL, May, 1952

81

Trailer Tricks

Continued from Page 61

aluminum. Both sets of trailers had the same type insulation.

We made repeated checks on temperatures and load condition for a period of six months. From these checks we were convinced that the trailers with the plywood linings did a much better job holding a constant temperature.

After our experience with these tests

we decided to pull out our aluminum linings and install plywood linings. And on all trailer shells which we have purchased since the tests, we have installed plywood linings. To date we have used plywood to replace aluminum linings on 41 trailers. We have insulated and installed plywood linings in 106 new trailer shells which have been purchased since the tests were made.

In our fleet we have two refrigerator trailers which we purchased fully equipped, which came to us with plywood linings. These two trailers have

been in constant service, one for 42 months, and one for 53 months. The plywood linings are still in good condition.

We find that it requires between 45 and 50 man hours to insulate a 32-ft trailer and install the plywood lining. Under our present schedule, we expect to have the 300 semi and full refrigerator trailers in our fleet, all with Douglas fir plywood linings within the next 12 months.

Smooth Floors, Side Guards, Save Loading Damage

By Walter Klasner
Alton Boxboard Co., Inc.

PAPER, either in rolls or flat bundles, comes in heavy packages, up to 4000 lb a piece. Hence it was essential for us, years ago, to go to power loading and handling equipment, necessarily of the heavier variety. Some of our fork lifts weigh as much as 9600 lb empty.

The twin problems arising from the use of such equipment concern trailer side panel damage and flooring. We licked the first problem altogether by installing 1/4-in. steel sheathing at the lower inside edges of the body as shown in the accompanying sketch. We find this arrangement will withstand the hardest glancing blows induced by lift trucks. We buy the steel sheets 4 ft long and 2 1/2 ft wide. Then a local steel fabricator bends the sheets on a metal brake to include the 20-deg rise and the 1-in. flange at the outside edge. These we keep in stock ready for use.

When we get a new trailer or repair an old one, we cut out sections to clear the upright post with an acetylene torch, weld the sheets into a continuous strip and tack weld it to the posts.

(TURN TO PAGE 84 PLEASE)



"And another thing . . . you think inflation is out of control now . . . wait till you hear the latest!"

HEAVY DUTY TRUCKS



Need Heavy Duty Filters

Champ Oil Filters and Refills—Heavy duty types—Stand up without failure on those heavy-haul, long-mileage runs—because the Champ is built to keep dirt out—mileage cost low.

Now the new depth-type filter medium—"Champak"—makes Champ even better. "Champak"—is pressure packed to prevent channeling—keeps oil acid—abrasive—and water-free. Hundreds more holes in the sturdy metal container permit steady oil flow, prevent pressure build-up.

10,000,000 Satisfied Users.

Write for the name of the CHAMP jobber nearest you.

CHAMPION LABORATORIES, INC.

Meriden, Conn.

Manufacturers of Oil Filters and Refills for Trucks, Passenger Cars, Tractors and Diesels



Price-Wise You Pay No More For Champ
Premium Quality...Service-Wise Champ Pays You

Raybestos[®]

Hycoc

BRAKE BLOCKS

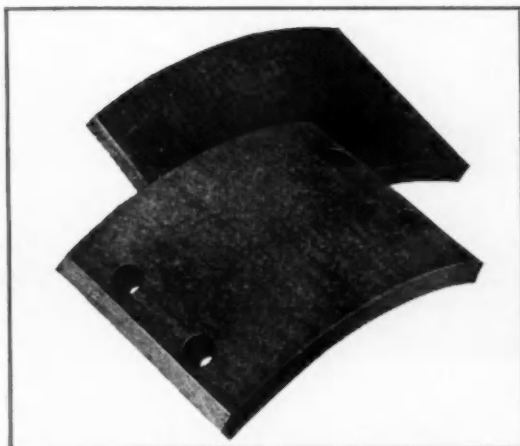
mean cooler brakes

The longer the contact between lining and drum, the more the heat increases. RAYBESTOS BRAKE BLOCKS in the correct combinations shorten the contact period, thereby keeping drums cooler. This fact has been verified by proving ground tests and dynamometer tests, and substantiated by thousands of fleet operators.

Raybestos Blocks offer you other big advantages, too: longer brake block life, fewer brake adjustments, reduced maintenance costs, lower costs per mile.

Additional assurance of better fleet performance can be gained by use of Raybestos Ray-Lok and Ray-Metl Clutch Facings. They have no equal for smooth engagement and long life.

For specific recommendations relative to your equipment and operation, a trouble-shooting chart, and complete technical information, ask your jobber salesman to get you Raybestos Fleet Engineering Service.



Raybestos PGT Sets provide specially engineered linings for medium and light-duty trucks that don't use blocks. They are factory packaged in

the right combinations to give lower cost per mile results.

50 YEARS OF SERVICE...50 YEARS OF PROGRESS...1902-1952

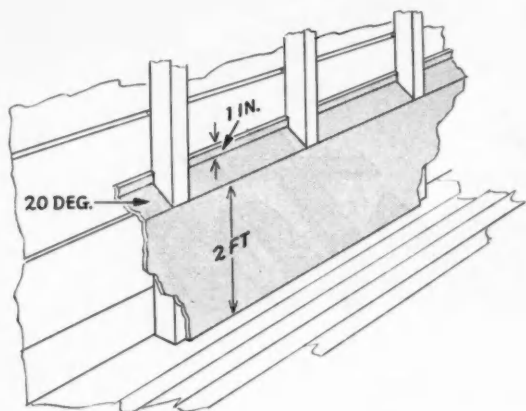


RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., Bridgeport, Conn.

MANUFACTURERS OF AMERICA'S BIGGEST SELLING BRAKE LINING

RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings • Radiator Hose • Fan Belts • Industrial Rubber Products • Rubber Covered Equipment • Packings • Asbestos Textiles • Sintered Metal Products • Abrasive and Diamond Wheels • Bowling Balls

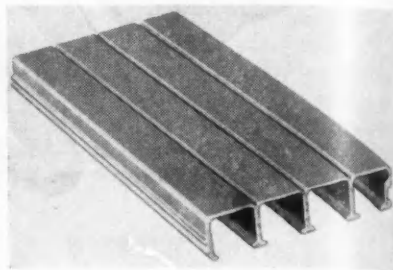
COMMERCIAL CAR JOURNAL, May, 1952



Left, 1/4-in. steel sheathing at lower inside edges of body eliminates damage from bumping with fork lift trucks. Right, aluminum flooring of the hat section extruded type is light and rugged—excellent for fork truck operation.

Trailer Tricks

Continued from Page 82



Our only problem in the past was corrosion behind these panels caused by moisture adhering to scrap-paper which we carry in large quantities on return loads. We licked this one, too, by undercoating the steel panels and the lower trailer side panels with mastic compound; and by making sure that the upper edge of the steel insert panel was as tight as possible against the trailer side. Originally we did not have the extra 1-in. vertical rise, but that went a long way toward keeping the scrap-paper out. Lately we have had no trouble from this aspect.

The solution to the floor problem lay chiefly in the installation of extra 3-in. channel iron cross members between the standard equipment cross members so that we end up with an average of 8-in. centers.

We have many types of floors in the fleet including many with 1 1/2-in. oak; some with aluminum panels laid over 3/4-in. plywood, and a few with the nailable steel floor made by Great Lakes Steel Corp. But our newest jobs, supplied by Andrews Industries, Inc., are of the hat section extruded aluminum type shown in the accompanying photograph. We have found this to be the lightest and with the extra cross members, it stands up well even with the heavy fork-lift loading trucks. These floors have a longitudinal oak nailing strip down the center and on each side. When a section does break through, we can saw it out and replace only the damaged section, bridging about three cross members for strength.

END

Please Resume Reading Page 62

Choice of Weapons

A woman's many virtues
Cannot ensnare a man
With half the ease and sureness
A few choice vices can.

—Omer Henry

NEW TYPE RADIATOR CLEANER

Saves Time and Money
in Fleet Maintenance Shops!



...but this one WORKS!
new WHIZ FORMULA 111

Most of the rust that clogs radiators forms in the engine blocks and cooling jackets where it is practically "baked on." Most radiator cleaners fail to remove engine block rust deposits, but FORMULA 111 was developed to do the job—and does! You can do professional cleaning without removing the radiator. Ask your jobber for WHIZ FORMULA 111!

SATISFACTION GUARANTEED OR
DOUBLE YOUR MONEY BACK



R. M. HOLLINGSHEAD CORPORATION

Leader in Maintenance Chemicals • CAMDEN 2, N. J.

Warehouses: Chicago, Dallas, San Francisco • Canadian Offices: Toronto



IT'S NEW—
NOTHING
LIKE IT!

Streamlined Bus Maintenance

Continued from Page 56

ever, provision was made in the repair area for ready installation of lifts should they become necessary. Rolling floor jacks are now used to lift one or both wheels in front or rear for brake or wheel work.

The new Venice facility does all maintenance work except major body repairs, which are handled by other shops.

The Work Areas

UNIT repair areas are all in one large room. Work is done on a semi-production basis, with the units passing through several sections of the room, each of which handles a different type of work.

PM at the new garage follows the company's standard practice for its coaches, more than 92 per cent of which are in service every day. Pacific Electric buses cover an average of over 1,760,000 miles a month with a performance record of 98 per cent completion of daily assignments. A systematic inspection and maintenance program directed by E. A. Stevens, general superintendent of motive power, is responsible for this achievement. The company foots a monthly motor coach maintenance bill of \$150,000, and maintains an automotive materials and parts stock of about \$350,000.

Each coach gets a complete safety inspection at every fifth fueling, including brake adjustment, a visual check of lights, doors and all points contributing to safe and efficient operation. Every 2500 miles the safety inspection is repeated plus lubrication and a battery test. At 5000 miles, in addition to the foregoing, distributors and filters are checked, crankcase oil

is changed, and the bus gets an engine tune-up and still more rigid safety check.

Inefficient or improperly operating parts are replaced as soon as noticed. Regular replacement of carburetors, fuel pumps, compressors, generators, transmissions, differentials or complete engines is made at intervals based on reasonable life expectancy of the

parts. The parts department carries a stock of 2000 items.

Over half of the company's coaches are diesels, which use \$33,000 in diesel fuel monthly. Gasoline-powered coaches require \$50,000 in fuel per month.

Approximately 450 bus operators work from this new facility. A force of 65 employees, almost all mechanics, is under the supervision of foreman Dan Teleky.

END

Please Resume Reading Page 57

Neglected Wires Cause Auto Fires!



BURN UP TRUCKS AND BUSES, TOO...

Check the Wire and Cable on every job! Replace old or defective wiring with CRESCENT WIRY JOE WIRES and CABLES!

Every day, hundreds of papers all over the country headline fires that destroyed cars, trucks, or buses because of defective wiring!

What's more, National Safety Council figures from all over the country show that vehicle fires caused by defective wiring run as high as 92%!

Don't compromise with safety... don't compromise with the best engine performance! Check the wire and cable on every unit in your fleet as a part of routine servicing. When insulation is worn or cracked... when conductors are corroded... install new genuine Crescent Wiry Joe Ignition Wires and Battery Cables. It means a big boost in safety and engine performance... a big cut in your costs.



"But you said two heads were better than one!"



THE CRESCENT COMPANY, INC.
PAWTUCKET, R.I.

Check the wire and cable on every job!

Hydraulic Highwork Tower Controlled From Platform or Truck

THE "Industrial Monkey" is a high-work tower designed to replace climbing spurs, ladders and scaffolding. The Donwill Co., Portland, Ore., has completed arrangements for distribution through the Mobilift Fork Lift Truck sales and service branches.

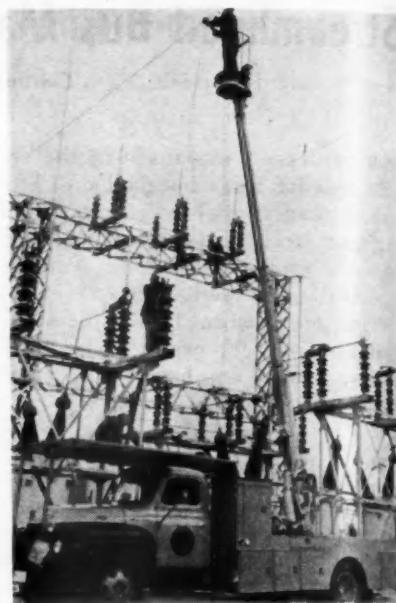
The Industrial Monkey consists of a hydraulically operated telescoping boom with a self-leveling cage that takes a workman directly to the spot where he must do his high work. In operations, the telescoping boom has a 270-deg turning radius, and a horizontal-to-vertical working span. The operator positions the cage at any desired spot through the use of six insulated foot controls, thus freeing both hands for work.

The workman's self-leveling cage is mounted on heavy-duty insulators and has a Micarta platform for protection

against more than 24,000 volts, according to the manufacturer. The workman is encircled by a waist-high, steel, one-piece guard rail. In addition to the foot-operated switches that control the movement of the boom, the operator has a signal switch to the truck cab and an emergency switch to stop the truck engine. A duplicate set of controls are located in the truck cab.

The boom and cage will carry a 200-lb man at any angle from the horizontal to the vertical position. The boom and cage is self-locking in case the engine stops. The boom can be lowered without oil pressure.

The Industrial Monkey can be mounted on any 2-ton or heavier truck with 102 in from rear of cab to center line of rear axle. The boom and cage retracts into a compact traveling position with a clearance of 10 ft 6 in.



Electric power companies in the west are using them extensively for cutting away tree branches endangering power lines, and for many other high work jobs. According to users, it reduces the cost of tree trimming $\frac{1}{3}$ to $\frac{1}{2}$ over previous methods.

1 Ball
line
inches



AM

TRAILER



✱ ALUMINUM-MAGNESIUM

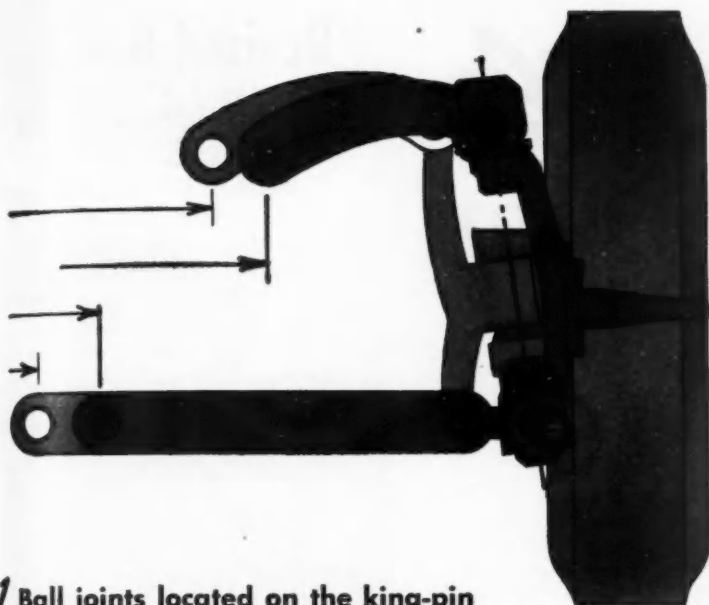
IT IS DURABLE IT IS LIGHT IT CARRIES NO
GREAT PREMIUM PRICE IT INCREASES THE PAY LOAD

KENTUCKY MANUFACTURING COMPANY R. C. Tway Company, Incorporated, Owner
2601 SOUTH THIRD STREET, LOUISVILLE 8, KENTUCKY

2 Lu
4

Th

COMM



1 Ball joints located on the king-pin line move inner pivots outward, creating extra inches under the hood for wider engine design.

Ball Joint Suspension

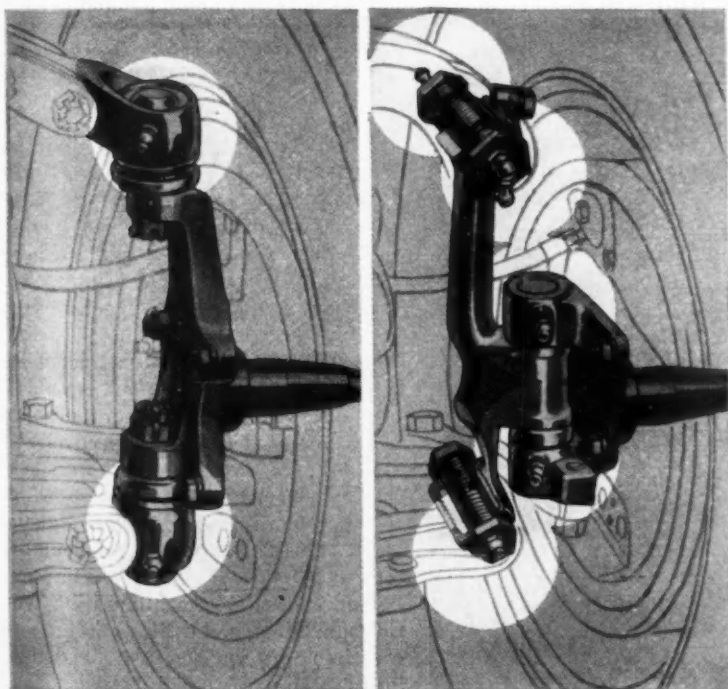
1 GIVES MORE SPACE FOR WIDER ENGINES

2 REDUCES LUBRICATION SERVICE 75 PER CENT

ONE GLANCE at the illustrations and you see how valuable inches are saved under the hood! Quick comparison points out the number of lubrication services eliminated. But these are only small points in the over-all story.

Thompson's Ball Joint Suspension also eliminates front suspension bind. It improves steering; makes handling easier; and prolongs service life. Through weight savings, parts reduction and compact design, Ball Joint Suspension speeds assembly. And in servicing, the equivalent of a complete rebushing job can be done in half an hour because removal of front wheels and bushings, bleeding the braking system and normal realignment are unnecessary.

Let Thompson's "ENGINEERED STEERING" experts help you solve your steering problems. Inquiries from all automotive makers are welcome at Thompson's Detroit Division. Call us at WA 1-5010.

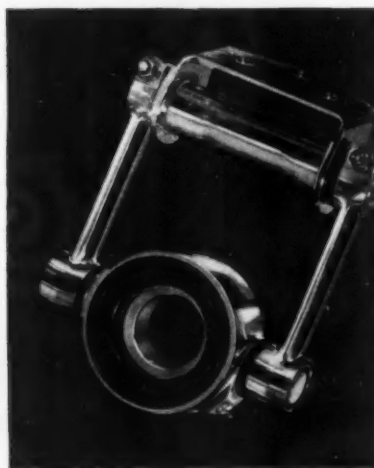


2 Lubrication points are reduced from 12 to 4 by eliminating upper and lower standard threaded bearings, knuckle support, king-pin and its bushings.

Thompson  **Products, Inc.**

DETROIT DIVISION

7881 CONANT AVENUE • DETROIT, MICHIGAN



Center Bearing Hanger for trucks—another Thompson development.

Get Full Details *how* **RCA** **2-WAY** **RADIO**

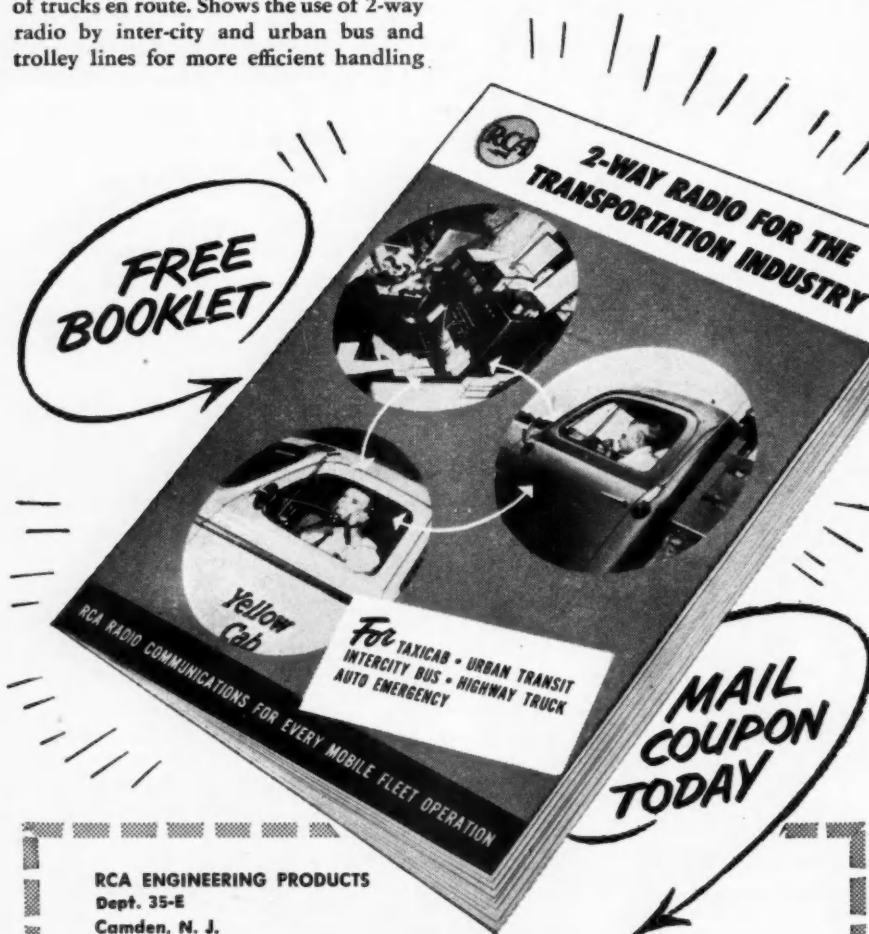
**provides more efficient service
and increases profits**

Here's a booklet that describes the advantages of 2-way radio... "what it is"... "what it does"... "how it works."

Explains how 2-way radio enables taxicabs to serve more people faster... cut down on "dead" mileage... boost cab profits. Tells you how trucking companies use 2-way radio to handle a greater volume of freight and maintain supervision of trucks en route. Shows the use of 2-way radio by inter-city and urban bus and trolley lines for more efficient handling

of peak loads... emergencies caused by breakdowns or traffic jams.

Contains information about RCA's service... on problems of usage, coverage, obtaining a construction permit. Every transportation executive should send for a copy. (In Canada, write: RCA VICTOR Limited, Montreal.)



RCA ENGINEERING PRODUCTS
Dept. 35-E
Camden, N. J.

Send me a copy of "2-way Radio for the Transportation Industry."

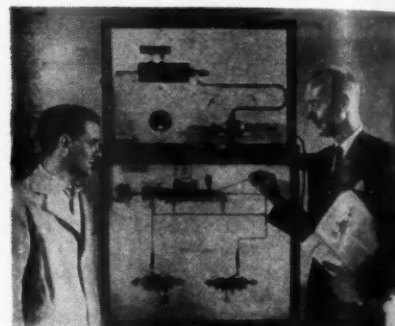
Name _____
Firm _____
Address _____
City _____ State _____



RADIO CORPORATION of AMERICA

Revised Brake Clinic Begins Tour

THE Puritan Co. of Rochester, N. Y., and the United Parts Mfg. Co. of Chicago, Ill., are working together on a common automotive cause. The firms have joined forces in providing a traveling hydraulic brake clinic to assist repair men in better understanding the background and everyday problems of automotive brake systems.



Here's a trouble spot. Demonstrator shows the fleet supervisor where possible trouble may develop

This new Puritan-United clinic, an expansion of an earlier show which Puritan had conducted before 75,000 repair men during a five-year period, has been in the production and refining stages for the last four months. The more than two tons of special equipment required to put on the clinic were assembled and constructed by Bernard A. Bannon, Jr., and Arnold E. Pommerening, the manager and field conductor of the clinic respectively.

Warm-up "preview" shows were held before almost 1000 men interested in the garage business in the Buffalo, N. Y., area recently, and to about 100 men at the N. A. P. A. Cleveland warehouse. The clinic continues its tour through Ohio, and will work its way east into western New York and then to the eastern seaboard areas.

The formal business of the clinic concerns itself with safety and preventive maintenance on brake systems. Spending most of its time in pinpointing common brake troubles, and stressing the need for their servicing.

Attention to brakes other than hydraulic is given throughout the program. The clinic carries working models of actual installations of air and vacuum brakes, along with air and vacuum in conjunction with hydraulic. Several glass models of hydraulic brakes are used to allow garagemen to see inside the brake as it functions to observe the action of pistons, cups, fluids, etc.



FEDERAL TRUCKS

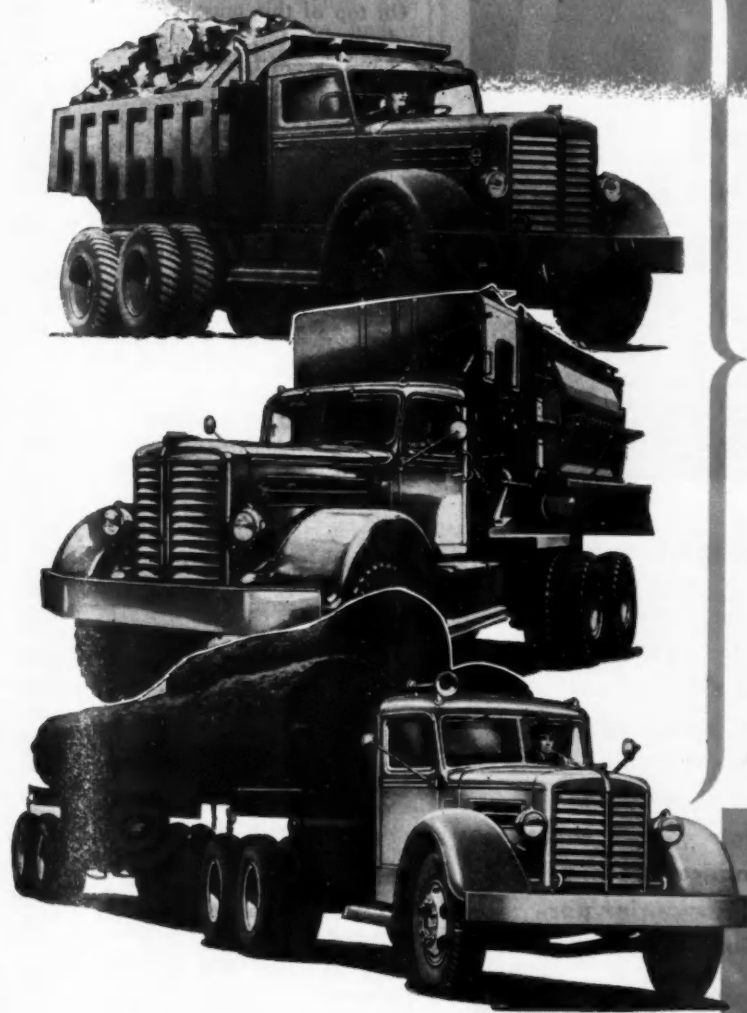
Offer you

*a complete line of
profitable haulers
1½ to 35 TONS
including six wheelers*

41 MODELS
in a wide range of wheelbases
and tonnage capacities

POWERFUL ENGINES
gasoline - diesel

UNMATCHED QUALITY
and **PERFORMANCE** at an
AMAZINGLY LOW PRICE!



See your Federal dealer or write for detailed literature

FEDERAL

MOTOR TRUCK COMPANY

Detroit 9, Michigan, U. S. A.

Builders of Quality Trucks since 1910

~~ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED~~
~~DATE 08-09-2001 BY SP-6 BJS/BJS~~



**for heavy-duty
trucks and trailers**

Enjoy lower cost per mile and the superior strength and safety of Gunitite Cast-Steel Wheel assemblies on your highway hauling equipment. Lower cost per mile is due to minimum unsprung weight which reduces wheel maintenance and tire wear . . . and to superior performance of Gunitite Brake Drums.

FOUNDED IN 1854

ROCKFORD, ILLINOIS

While it is general ATA policy not to attribute remarks made at the session to individual bus operators, several very interesting discussions can be reported in a general way.

The discussion which followed indicated that most of the operators present were using all of these media with varying success and enthusiasm. Some had experienced considerable trouble with the booster heaters while others had large numbers in operation with little or no difficulty with a once a year overhaul plan.

Inspection, oil change and life of parts were also given considerable attention and comparison, and it was obvious that the figures varied widely. Oil

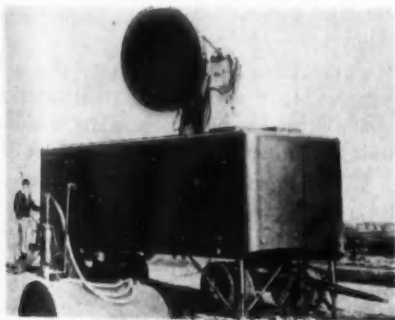
change periods ran all the way from 1000 to 12,000 miles and the life of a long list of component parts again indicated wide variation between the different operators.

Nonetheless, it is quite obvious that considerable further attention will be given to the establishment of parts through which bus, and eventually truck operators, can establish a means of comparison with other properties.

Most operators had taken considerable precaution with regard to both storage and handling of the LP gas, and most had established alarm systems, both electric and manual, in their trucks.

Several of the operators present indicated that they were building their own batteries, most of them using standard parts available from the battery manufacturers. By doing so they were saving about 30 per cent in their battery costs.

White Receives Contract



A defense contract with the Western Electric Co., New York, for the construction of the bodies for fire control trailers similar to that shown above, has been announced. White will build the trailer body of airplane construction, using light metals. The 21-ft trailer shown above was originally designed by the Douglas Aircraft Co., Inc. It houses an electronic fire control system designed by the Bell Telephone Laboratories. The electronic system, made by Western Electric, discovers and tracks hostile planes, feeding continuous information on target location, to an intricate series of instruments which automatically controls anti-aircraft fire.

LP Gas Operation

AS might be expected, the subject of LP gas (propane) operation came in for a full share of the discussion time. One operator in the mid-west commented on his early problems in gas conversion, including the fact that his average cost was \$736 per bus including 80 man hours of labor. Storage cost averages \$1 per gallon.

This same operator reported that a ten year old bus converted from gas to LP gas was still running after 100,000 miles.

his LP gas cost was 33 per cent less, giving him an overall fuel saving of 25 per cent. He and several other operators like him were definitely enthusiastic about their LP operation. In most cases oil change periods had been extended as high as 12,000 miles due to the cleaner burning of the LP fuel.

Most operators had taken considerable precaution with regard to both storage and handling of the LP gas, and most had established alarm systems, both electric and manual, in their trucks.

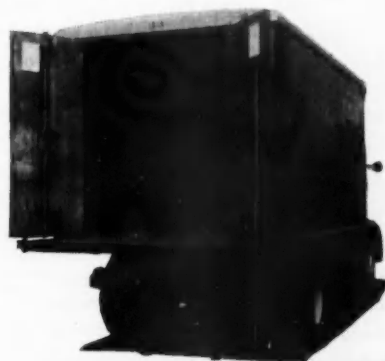
MERTENS SPECIAL NEEDS

EBERHARD

WITH STOCK ITEMS

The wide variety of truck hardware in the big Eberhard line generally makes it unnecessary to design and build special fittings for unusual requirements.

For instance, the heavy truck shown in these pictures has folding rear doors, but the hardware consists of standard Eberhard stock items. Doors are attached to the body with No. 5832 Hinges; No. 9485 Hinges connect the door sections; and No. 5607 Slam-Tite Locks provide the door fastenings.



For all your body hardware need, special or regular, consult the Eberhard catalog. Eberhard time-tested fittings offer real economy and dependability.

EBERHARD *Long Run*

TRUCK BODY FITTINGS

EBERHARD MANUFACTURING CO.

Division of the Eastern Malleable Iron Co. EVARTS AVENUE CLEVELAND, OHIO

Mobile Service Truck Saves . . .

Continued from Page 57

vice and maintenance repairs must be driven to and from our Chicago central garage.

2. Save much travel mileage for these trucks.

3. Eliminate necessity of furnishing replacement trucks and consequent re-loading operations, which would be required if vehicles had to be taken out of service and brought to our main

garage for servicing. This is particularly of value to our leasing customers, since there is no interruption to their loading or delivery services.

Estimates of operations savings include: 20,000 miles of truck travel at 10 cents per mile, \$2,000; 3200 hours of drivers' time at \$2.00 per hour, \$6,400—Total, \$8,400.

Estimates of deductible operations

costs: Mileage or mobile unit No. 1—25,000 miles at 10 cents, \$2,500; Mechanics' unproductive labor in travel—1300 hours at \$2.00 per hour, \$2,600—Total, \$5,100.

Estimated favorable annual balance, \$3,300.

Development of the Willett plan for using these mobile servicing units was closely associated with—and, in fact, made practicable by the recent basic revision of our company preventive maintenance program. This revision has included the development of new time and procedure standards for our shop inspections; and also new adjustments in our employee incentive program.

As a result of our new procedures, it became necessary to devise a more economical and convenient way of performing the "A" inspection on vehicles parked outside our main garage, since that servicing would now be relatively simple to perform and would require only light tools and equipment. The result was the development of our first mobile inspection and maintenance unit.

Complete Equipment

FOR the set-up of our No. 1 mobile servicing unit, we chose a cab forward type truck body with interior floor space of 6 x 10 ft. and a ceiling height of nearly 6 ft. It was painted white and lettered "Willett Inspection Maintenance Unit I."

The shop section is partitioned off from the front driver's seat by an expanded metal screen extending to the ceiling, with entrance for the driver through a centered sliding metal-frame door.

Careful study was given to the best serviceable use of the limited interior space for shop-servicing. The mobile-unit facilities now installed include:

1. Air compressor, operated either by a 2 hp electric motor or a 3 hp gas engine. The air pressure of 175 lb per square inch supplies air for tires, operation of a grease pump, and a lube oil pump.

The gas engine normally will be used only when electrical power current is not available. The provision of this alternate engine has required that an exhaust pipe of flexible metal be extended out through the roof of the truck body.

2. Individual electric power and lighting unit, of the automatic start-and-stop power type with 1500-watt capacity, suitable for the operation of stationary and movable lights, and for electric motor driven tools.

(TURN TO PAGE 98, PLEASE)

COMMERCIAL CAR JOURNAL, May, 1952

Big FIRE EXTINGUISHERS...FOR Big TRUCKS AND BUSES!



2 qt. size (illustrated) for large trucks and buses; 1 gal. size for terminals and garages.

This is no time to take chances! Be sure your big vehicles have fire extinguishers big enough to handle any emergency.

That means 2 quart and 1 gallon pressure-operated Pyrene* Vaporizing Liquid Extinguishers. They're sure death to almost any kind of fire. They're effective on flammable liquid fires, safe to use on electrical fires. Instant air-pressure operation. Immediately refillable. Available with either wall or running-board bracket, and with or without built-in hand pump to renew air pressure.

Their bigness gives them fire-killing power you can always count on—around your terminals and garages as well as on your vehicles. Check your requirements and call your Pyrene jobber today!

*T.M. Reg. U.S. Pat. Off.



PYRENE MANUFACTURING COMPANY

589 Belmont Avenue

Newark 8, New Jersey

Affiliated with C-O-Two Fire Equipment Co.

"SURE, fleet operators like ourselves are interested in cutting maintenance costs and 'down time' on our rolling stock, but it happens that we're more interested in giving our customers fast parcel delivery service," says J. F. Schaeffer, Fleet Maintenance Superintendent, Lucky Stores, Inc., San Leandro, Calif.

"People order goods from the store and

they want them delivered on time as promised. That's why we've switched over to Auto-Lite Batteries for most of our vehicles. The Auto-Lite 'Sta-ful' needs water only one-third as often as ordinary batteries and costs us less per mile.

"Auto-Lite Batteries measure up to our high standards and we're glad we've made the change."



AUTO-LITE

batteries

IS AN AUTO-LITE BATTERY FOR EVERY USE — CARS • TAXICABS • TRUCKS • BUSES • TRACTORS • DIESEL MOTORS

Service Truck Saves . . .

Continued from Page 94

3. A 100-lb drum of chassis grease and one of gear lube, both operated by air pumps.

4. A total of 75 bins, available for the stowage of nuts, bolts, fittings and parts.

5. Extra repair and servicing units kept in stock for emergency use. These include filter cartridges, carburetors, distributors, generators, light bulbs,

tail and clearance lights, windshield wipers, mufflers, floor mats, brake fluids, and numerous others.

6. Work bench 25 in. wide and 3 ft in length, with a 3-in. bench vise.

7. Air line with 60 ft of hose for airing tires.

8. Other tools and servicing units for the mobile shop. These include such items as heavy-duty gasket wrench, 7-ton jacks, 4 jack stands, 2 creepers, rpm and cam dwell tester, battery starter tester, electric drills, step ladder, anti-freeze tester, thermos jar of drinking water for the mechanics.

As compared to the original setup of this No. 1 mobile servicing unit, the chief changes in its equipment made during the two-year period of its use, have included a fast oil changer, more parts in supply, volt ammeter tester, additional small tools, heavy-duty wrenches, electric drills, and other tools.

No. 2 Truck Added

IN November, 1950, we placed in operation our second supplementary mobile servicing truck. This addition was prompted by two chief practical reasons: Expansions in our Chicago-area operations at the southern border of the city; and demonstrated servicing advantages from use of our No. 1 mobile unit.

Service from the No. 2 unit includes road calls and general servicing on 30 train petroleum transports, 48 steel tractors and 80 steel trailers—all heavy-duty equipment being operated by the company. It also handles the "A" inspections and servicing on the trailers.

There have been only slight changes in the type of truck selected for this No. 2 mobile shop unit and its interior servicing equipment. In general, these changes have been toward the handling of servicing and repairs on heavier trucking equipment. The changes have included a larger truck body (12 ft long as compared with 10 ft); dual tires; electric starter in air compressor; more bin space; air impact drills; two stand lights; acetylene torch for heavy steel cutting and welding. One additional servicing improvement in mobile truck No. 2 has been a new trailer unit fitted with electric welder for steel cutting and welding.

PM Control

HEADQUARTERS routing of our two mobile servicing trucks must be carefully handled. This office scheduling is guided by a large wall board on which is displayed movable cards to represent about 1000 units of company equipment. These cards are in three different groups. The largest group is for equipment scheduled for PM servicing at the main headquarters shop; the second group is for units serviced at outlying company garages; and the third group is for the 200 units of leased company equipment to be serviced by Company Mobile Unit No. 1 at about 20 different scattered loading platforms or garages.

This board also is supplemented by a smaller board for the 160 units of company equipment being operated out from our company South Side gar-

(TURN TO PAGE 100, PLEASE)

BEYOND COMPARE
THE FINEST GENERATING AND
STARTING EQUIPMENT MADE

**Leece-
Neville**

CRANKING
MOTORS



Tops in reliability, long life, performance. High torque for instant breakaway. Fast cranking for quick start.



Now producing cranking motors, generating systems, pump motors and special equipment for military engines.

ALTERNATORS



25 to 35 amps with engine idling. Keep batteries up. AC power changed to DC by dry plate rectifier...no more commutator troubles! Capacities to 80 amps for 6 volt systems; to 175 amps for 12 volt. For all the facts, write The Leece-Neville Co., Cleveland 14, Ohio.

YOU CAN
RELY ON

**Leece-
Neville**



Be Sure to Specify Leece-Neville

ALTERNATOR SYSTEMS • GENERATORS
STARTING MOTORS • REGULATORS • SWITCHES
FRACTIONAL HP MOTORS





I want brake lining
that saves me real

DOUGH

Of course you do . . . every vehicle operator does . . . no matter what kind of vehicles you run, or how many. And the brake lining that really saves for you is . . . INLITE, the one-quality, top-quality lining. It saves where saving really counts . . . in the long haul, the thousands of extra miles of smooth, quick, safe stops! INLITE . . . in matched sets compounded for *each* brake on *each* vehicle! A General Motors product, tested at the Proving Grounds. Use it . . . and SAVE!

INLAND MANUFACTURING DIVISION • General Motors Corporation • Dayton, Ohio

INLITE BRAKE LININGS

A GENERAL MOTORS PRODUCT



A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE



Service Truck

Continued from Page 98

age. These units are being serviced jointly in this garage shop, and by our newest Mobile Unit No. 2 with operations headquarters at this garage, and which also handles area road failures.

On the large PM wall board at company headquarters is assembled all mileage and time-period data to guide the setting of PM schedules for the

1000 company units listed on this board. Thus, the several company dispatchers at company headquarters are afforded advanced information as to which units of equipment must be held in the shop for their scheduled PM servicings.

As related to the 200 company leased units, which are being serviced by Mobile Unit No. 1, at 20 different lessee garages or loading platforms, the display board is essential to this systematic servicing.

A week in advance of the date for the PM servicing of such a group of

leased company trucks, a notice form is sent to the lessee of these trucks, listing the date and the place of this scheduled "A" servicing.

"It is imperative," states the form letter, "that the vehicles be inspected regularly for efficient and uninterrupted services. Your cooperation will be very much appreciated. Please have the driver report to the foreman in charge, and also report any items needing attention."

As the next step in the dispatching of our No. 1 mobile unit, the general supervisor for this service often must make advanced delivery of special parts needing replacement, and not usually stocked in the mobile servicing unit.

When our No. 1 mobile unit arrives at an outlying garage for a scheduled servicing job on a group of leased company trucks, we consider it very important that our mechanic-driver in charge of the mobile unit shall properly handle his "public-relations" responsibilities.

This chiefly includes the planning of his truck servicing job in such manner as not to interfere at all or as little as possible with any scheduled night platform loading or unloading of the trucks which he has been sent to service.

The facilities of the mobile unit enables us to carry through the night servicing job in a garage in such manner as not to interfere with the night platform service use of the trucks. We enjoy a considerable saving in road travel time, and the operating mileage of each of these trucks, when they are being serviced every 4 or 5 weeks. Such a trip, multiplied by the 200 Willett trucks now being serviced by our No. 1 mobile truck, would amount to a saving of some 20,000 miles per year.

END

Please Resume Reading Page 58



"Oh, just the usual trip . . . except for the flat tire I picked up this side of Cincinnati."

**Cylinder
Sleeve**

COMME



Route your trucks the shortest way every trip. The time and gas used by your drivers looking for unknown streets, driving all around Robinson's barn to make deliveries, will buy a hundred maps like Hearne's Street Map of your city and county area.

Street names are in big, black type, and instantly spotted with Hearne's patented, automatic Street Finder. And every map is mechanically indexed.

Over 100,000 truck owners use Hearne maps every day to give customers better service and cut truck mileage. Many users claim they save the cost of the map in a single day's use.

YOUR CITY MAP FOR 10-DAY FREE TRIAL

Send for cloth, cellophane-finished 44" x 65" map now. Stop delivery waste. Mark routes in crayon we supply. Washes off instantly. Use map for 10 days. Then, if you can get along without it, send it back...or send \$42.50 and it's yours.

MAIL TODAY OR USE YOUR LETTERHEAD

FREE EXAMINATION ORDER FORM

Hearne Brothers (America's Largest Manufacturers of Commercial and School Maps)
23rd Floor, National Bank Bldg., Detroit 26, Michigan.

Without obligation on my part, send me a map of my city and county area. After 10 days' FREE use in my office I'll return the map or remit \$42.50. Prices on cloth, cellophane, spring rollers, stainless steel and labor are going up! Order today!

Your Name _____

Company _____

Address _____

City _____ Zone _____ State _____

THE MASS PRODUCED motor vehicles of today require engine and chassis parts that assure maximum performance and dependability.

For fifty years Thompson Products has been making precision parts for cars, airplanes, buses, trucks, tractors and industrial engines—both gasoline and diesel.

Thompson engineers have perfected such vital engine parts as piston pins for the powerful, dependable aircraft engines that power the planes so vital to our defense. The same metallurgical knowledge and manufacturing know-how are used in making the piston pins for the mass produced automobiles of today.

For engine performance you can take for granted: *Count on Thompson*

Along with piston pins, Thompson's Special Products Division makes valve seat inserts and cylinder sleeves for the finest aircraft engines, heavy-duty trucks and tractors, industrial engines as well as for passenger cars.

If you are having trouble with engine parts—if you need a better, more dependable supplier, just write or call Special Products Division, Thompson Products, Inc., 2196 Clarkwood, Cleveland 3, Ohio. You'll soon learn what car and plane makers have known for 50 years—you can count on Thompson.

Thompson Products, Inc.

**SPECIAL PRODUCTS
DIVISION**

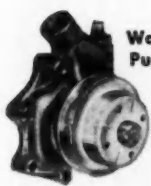
2196 Clarkwood Rd. • Cleveland 3, Ohio



Cylinder Sleeve



Industrial Pump



Water Pump



Piston Pin



Valve Seat Insert



U-Flex Piston Ring

Rebirth of a Truck . . . Army Style

Continued from Page 53

Ordnance experience with rebuilding of tires during the Roll-up Operation casts a new light on the old argument about deterioration of tires during long periods of storage. Tires that had been standing on Pacific islands amid jungle humidity and blazing sun for as long as five years have come back into the Depot for rebuilding and are still giving

ing satisfactory service. There are naturally some weather checks, but the carcasses have been shown to be economically repairable at considerable savings to the taxpayers. Tire rebuilding facilities in Japan are as complete and modern as any found in the U. S. today. Total rebuilding time runs about 5 man-hours per tire, and cost

is about \$7 on an average, compared with a new value of \$50 to \$80.

A very interesting phase of the rebuilding operation is the reclamation program on fasteners of all types. An average of 8 tons a day of nuts, bolts, washers, lock washers, cotter pins, and other items of small hardware are put over powered conveyor belts for segregation and reclamation. Since this type of hardware would cost about \$1,000 a ton to replace new, the savings are considerable.

Reclaiming Machines

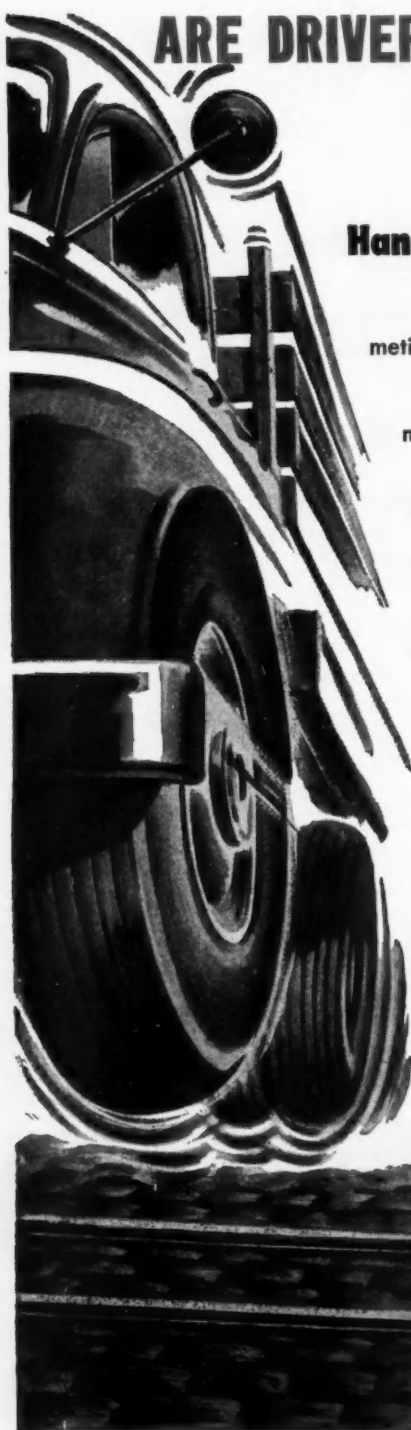
OF particular interest are two machines developed by Ordnance engineers for sizing washers and nuts and bolts. One machine sorts nuts and washers according to size and consists of two inclined shakers with steel beds having holes of various diameter. The nuts and washers are shoveled in at the upper end and move progressively down the bed, dropping into the various holes and into chutes leading to tote boxes. It is powered by an electrically driven old Jeep differential with eccentrics mounted on the axle shafts and attached to the shaker beds with automotive connecting rods. Another simple but very effective device for separating various bolt and nut sizes is constructed of two steel water pipes spirally bound with wire to provide an auger effect and driven by a discarded small winch. The tubes are inclined and are set slightly off parallel so that the gap widens at the lower end. Bolts and nuts are shoveled into a hopper at the upper end and feed through a chute into the channel between the rollers. The auger action moves them down the separator until they drop through into boxes.

Small items and those not easily separated (TURN TO PAGE 105, PLEASE)

Chick Wagon



A delivery body has been designed specifically for the transport of baby chicks to insure safe, "alive arrival" with a new forced air ventilating system. This new all-steel, all-welded baby chick transport has just been introduced by the Herman Body Co., St. Louis, Mo. In the past, baby chicks were shipped by rail or transported to their destination in almost any kind of trucks or even old school busses.



ARE DRIVERS "RAILROADING" YOUR VEHICLES?

Handy Governors Will Stop It

Any driver is likely to be less than meticulous in his care of a vehicle he doesn't own. Many feel no compunction about "railroading" your vehicles. Drivers do most of their work away from supervision . . . abuses are hard to correct.

Handy Governor will stop "railroading" —stop practices which run up costs and wear out vehicles before their time.

The savings in tire, fuel, and lubricant costs, engine repairs, brake maintenance and general maintenance are spectacular. Reduced accident and insurance costs are equally important.

Let us show you some figures on savings — and tell you how little it costs to get them.



KING-SEELEY CORPORATION

ANN ARBOR, MICHIGAN

PLANTS AT
ANN ARBOR, SCIO,
YPSILANTI

Army Reclaims Trucks

Continued from Page 102

arated in these two machines are passed over conveyor belts where Japanese women sort and place them into individual containers. Lock washers generally are not reused but practically everything else that is in good condition or can be restored finds its way back into a rebuilt vehicle. Small parts are chemically cleaned and bonderized and nuts and other threaded hardware are put back into shape by thread chasing.

Modern materials handling equipment and power tools are widely used in the Oppama operation. Electric and pneumatic hoists are used for all heavy lifting operations, and thousands of feet of roller conveyors are in evidence. About 94 per cent of the machine tools at Oppama were obtained from Japanese industry as war reparations. In its entire scope the rebuild shops stack up well with what would be found in a comparable operation in the U. S.

An illustration of how it is sometimes cheaper to make a part at Ordnance Shops in Japan rather than to buy it from the U. S. is manufacture of wheel rim head locks for the GMC 2½ ton 6 x 6 truck. Originally started as a makeshift because of difficulty in getting the parts from this country, the operation has proved so successful that it is being continued. It consists primarily of heating a strip of sheet steel in an oil-fired furnace and then performing a blacksmithing operation by clamping one end to a form and wrapping the heated strip around to form a circle. The Ordnance official in charge estimates that the cost is far lower than



Shop devised machine for sorting nuts and bolts is made from a Jeep differential with cams and connecting rods for shaking down items by sizes

would be required to purchase the item in the United States and ship it to Japan.

An intensive campaign also is carried on constantly to salvage every bit of scrap metal from unusable parts of vehicles. Truck cabs and metal dump bodies beyond repair are cut up to be put through the stamping presses. One operation involves use of salvage steel from such containers for the glove box of the ¾-ton Dodge 4 x 4 truck.

END

Please Resume Reading Page 54

for STEADY SERVICE Specify HANSEN

No. 12-S

No. 60

No. 85

No. 70-D

BUILT especially to withstand the wear, tear and rough usage of commercial body service, Hansen Hardware reduces repairs, breakage and replacements to a minimum. Examples are the products illustrated:

- No. 12-S Square-Corner Hinge.** Leaf-type, two-ply, all-steel. 12" strap. Weight, 2¾ lbs.
- No. 60 Lock.** One-piece. 5" x 10". Hardened 1¼" striker bolt. Die-formed steel bushing.
- No. 85 Regulator.** Enclosed mechanism. Straight lift. Lead-coated to prevent rusting.
- No. 70-D Refrigerator Door Lock.** Lug-leverage action. Lugs and handle adjustable. Rod 72".

Whatever type of service in which Hansen-equipped trucks, trailers and tanks are engaged, Hansen stands up under hard, heavy-duty, grueling service — insuring steady performance and economy.

Hansen makes commercial body hardware in a complete line—Locks, Regulators, Hinges, Handles. What are your requirements?

REQUEST CATALOG

A. L. HANSEN MFG. CO.
5047 RAVENSWOOD AVE.
CHICAGO 40, ILL.



Machine for sorting nuts and bolts is made from two lengths of pipe and coils of wire. Variation in distance between rollers permits dropping through into separate bins

designed
of baby
arrival"
ating sys-
all-welded
been in-
y Co., St.
by chicks
transported
any kind
ol busses.

May, 1952

COMMERCIAL CAR JOURNAL, May, 1952

L-P Gas Cuts PM Costs

Continued from Page 73

linkage, manifold and other units installed on the truck at the factory.

Admittedly there is a great divergence of opinion in the L-P Gas industry concerning the merits of the so-called straight and combination equipment. We are obtaining satisfactory results with the combination equipment, and results are what count.

In rare instances our concern will make the conversions, but we prefer to direct the fleet personnel in the work. We are convinced that the men who operate and maintain the equipment should understand it thoroughly. The best way to achieve this is for them to make the installation. The deliberate, step-by-step installation requires

from one to two days for each truck.

Some concerns change the oil at variable mileage while others never change. We of Propane Corp. don't change the oil in our own equipment because we believe change is unnecessary. Randall F. Myers of Dutch's Esso service in Baton Rouge, says he uses 10 weight oil in his F8 Ford engines and changes every 50,000 to 60,000 miles. Dutch, an owner of the concern, says he changes oil filters every 3,000 or 4,000 miles and points out that one of the engines has operated 265,000 miles with a total parts cost—other than normal tune-up, plugs, points, etc.—of two head gaskets. "We find that the savings in the cost of motor oil and maintenance will amount to enough to pay for a new engine after 200,000 miles of operation," he declares.

S. R. England, of England Transportation Co., Inc., of New Orleans, who put six L 195 Internationals in service about January 1, says that the concern expects to net a substantial savings in fuel and maintenance due to the use of propane.

England says the concern follows the practice of changing oil and filters once a month or roughly every 8,000 miles. "We find that spark plugs and points give remarkable service and present indications are that we will change plugs and points at about 35,000 mile intervals.

The New Orleans transportation company owner said that the concern is
(TURN TO PAGE 108, PLEASE)



LISTEN to Your Compressor...
too frequent running means trouble!

**exclusive
DOMED PISTONS
and cylinders...
CUT RUNNING TIME!**

A superior engineering point of difference is apparent when you look at Champion's Aero-Dynamic pistons and cylinders. They are domed to eliminate turbulence by funneling compressed air from the extreme top of the cylinder. This keeps air and cylinders cooler, reduces running time and insures greater economy. This superior engineering design—combined with such other Aero-Dynamic features as wear-resisting plate valves, automotive type connecting rods and bearings, and separate crankthrows for each connecting rod—is the reason for Champion's lower running time and longer compressor life.

Listen to your compressor—if it runs nearly all the time, you'll be needing a new compressor soon. See your Champion Jobber or write today for the new Champion Catalog.

CHAMPION PNEUMATIC MACHINERY CO.,
829 N. Pleasant St., Princeton, Illinois

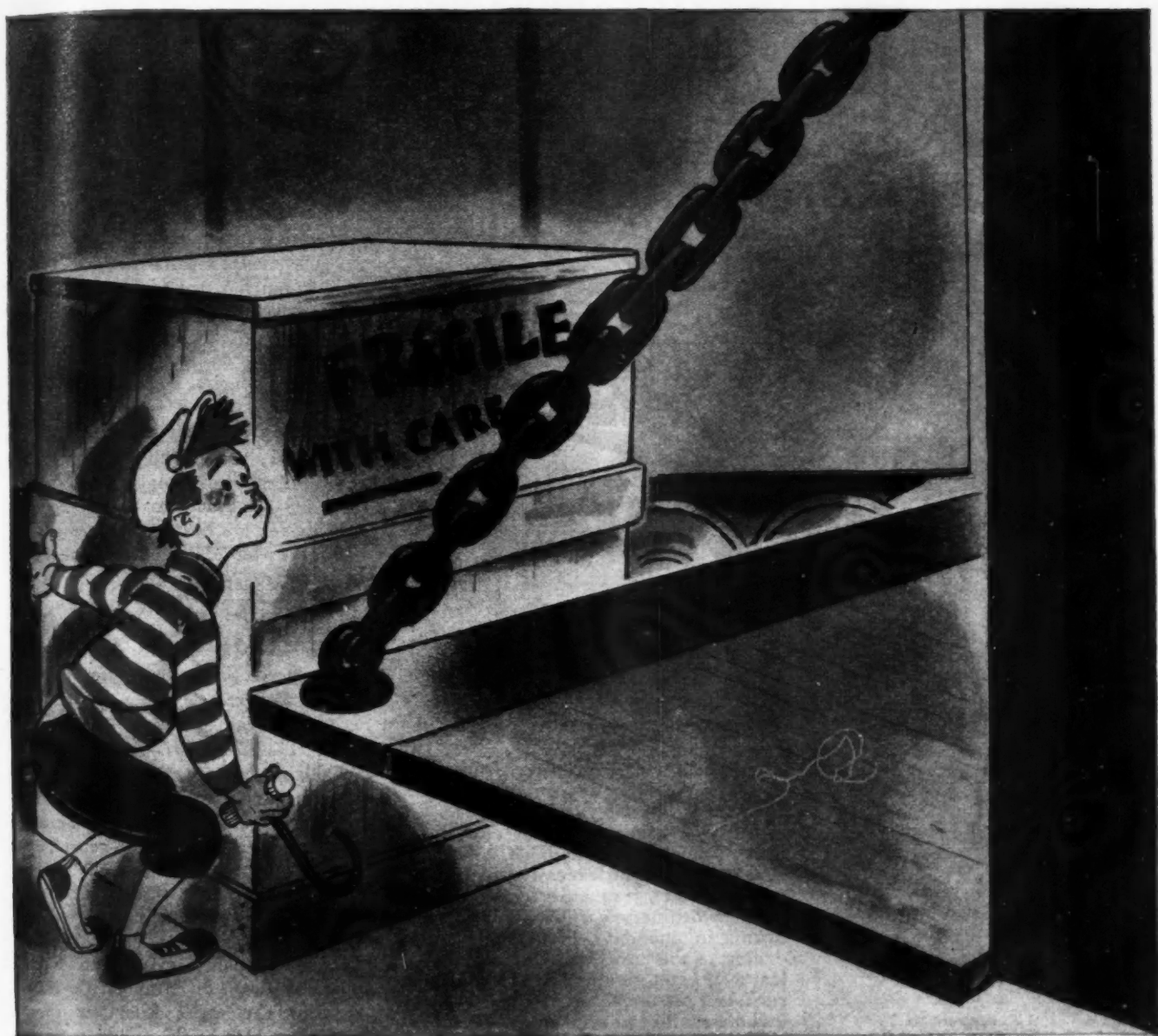
CHAMPION
AIR COMPRESSORS

CAR WASHERS • AIR HOSE REELS • SERVICE TOWERS • CEILING SWIVELS

Trailer Display



The role that trailers play in present-day transportation is exemplified in a graphic exhibit just opened in Chicago by Trailmobile Inc. The three-dimensional display in the Pullman-Standard Building on Michigan Ave. includes miniature models of principal types of trailers surrounding a large map of the United States. Illuminated plant and product photographs from Trailmobile's four American and Canadian plants reveal key manufacturing processes. A working scale model of a Trailmobile tandem axle suspension is shown as a floor exhibit.



Don't send a boy to do a man's job!

SOME JOBS just naturally call for man-sized muscles. And some lubricating jobs . . . heavy trucks or buses, for example . . . call for a "man-sized" motor oil.

Phillips 66 Heavy Duty Motor Oil meets this "man-sized" specification. It's refined by the new, improved "cold fractionation" process. The basic film strength of Phillips tough crudes is not broken down by overheating. No breakdown in quality. And selected additives help keep engines cleaner

by dispersing carbon, fighting corrosion and acids, and reducing foaming.

All this, in turn, means lower operating and maintenance costs for trucks and buses.

Ask to have a lubrication engineer set up a side-by-side test of Phillips 66 Heavy Duty Motor Oil next to your present motor oil. For low-cost, heavy-duty lubrication and engine protection, standardize on Phillips 66 Heavy Duty. Phillips Petroleum Company, Bartlesville, Oklahoma.

Oil for the Engines of Commerce



PHILLIPS 66 HEAVY DUTY MOTOR OIL

COMMERCIAL CAR JOURNAL, May, 1952

PROOF

that GUN IRON* BRAKE DRUMS



**CUT
COSTS
3 WAYS**

** New high-carbon alloy of Gun Iron developed expressly to minimize heat-checking and squeal—give longer wear-life.*

Proven Features

- LONGER WEAR
- MINIMIZED HEAT-CHECKING
- MINIMIZED SQUEAL
- LOWER COST-PER-MILE

TRUCKER REPORTS:

Savings of \$136.62 on brake drum costs per truck for every thousand road-miles; here's how it figures out. This trucker is making daily runs through the mountains with real tonnage. The excessive drag on his brakes frequently cracked through ordinary cast iron brake drums in one day! Hunt-Spiller drums, of the new Gun Iron alloy, last over eight months on the same run. And the above savings do not include savings in service costs or profits lost while the trucks are in the garage.

BUS COMPANY REPORTS:

Ordinary brake drums were lasting an average of 30,000 miles before they had to be replaced. After installing Hunt-Spiller Brake Drums the bus company reports that the original set has gone 97,000 miles currently and is nowhere near the replacement point.

Gun Iron Brake Drums have been noted for long-wearing ever since they were pioneered by Hunt-Spiller over twenty years ago. The above reports are based on the new high carbon Gun Iron alloy perfected in our laboratories expressly for brake drum applications. Our representatives will gladly discuss their features with you upon request. Built to original equipment specifications for most busses and trucks; fully guaranteed.

SEND FOR NEW BULLETIN



HUNT • SPILLER

MANUFACTURING CORPORATION

AUTOMOTIVE DIVISION

399 DORCHESTER AVENUE • SOUTH BOSTON 27, MASS.

L-P Gas Cuts Costs

Continued from Page 106

experiencing no motor trouble at all and relates the following experience which he says indicates "that we can expect a much longer engine life when using propane as a fuel:"

"We made repairs on one engine which ran hot due to a broken water hose at about 73,000 miles. Due to the heat, No. 6 sleeve was cracked and No. 5 collapsed. However, the remaining sleeves showed a maximum of .0005 wear. The valves were in good condition as were the inserts and crankshaft."

We take issue with the contention publications concerning the so-called propane disadvantages of low specific gravity and low heat content per gallon. With the manifold properly cooled and the compression ratio increased to the maximum—usually eight to one or better—we have gotten very satisfactory results. These results are due, perhaps, to the increased volume metric efficiency of the engines.

Nor have we sustained in our operations the frequent concern expressed by engineers for the under structure of the engine, connecting rods, connecting rod bearings, crankshaft and crankshaft bearings. In our field conversions we have experienced no trouble from these sources and we have raised engines in truck services as high as nine to one. In my personal car which also operates propane, it is 10 to 1 and operated ahead of an automatic transmission. The car speedometer shows more than 20,000 miles and in consideration of the slippage involved and the relatively high road speeds, I am inclined to believe that the engine has what would have been the equivalent of 25,000 miles—had it been working in conjunction with a direct manual shift transmission.

This engine had originally 6.5 to 1 compression ratio and I am confident that the engineers and manufacturers of this particular engine would have shouted an emphatic "no" to proposals to raise the compression ratio such an extent.

Aside from its advantage, increased use of propane offers a possible solution to the national defense demands for additional fuel. More use of commercial propane by truckers frees high octane and other gasoline for aircraft and military vehicles.

END

Please Resume Reading Page 75

COMMERCIAL CAR JOURNAL, May, 1952

Silencing First!

Here's startling news for the muffler industry! Our engineers have developed a revolutionary muffler with a ribbed outer shell which does an outstanding job of silencing the new high compression engines. The ribs create a dead air space between inner and outer shells. They act as fences which "fence-in" the sound vibrations and keep them from reverberating around the shell.

This muffler, now being made for original equipment on several 1952 models by our subsidiary, Oldberg Manufacturing Company, is available from AP wholesalers. The new design will also be used whenever this type of silencing is required for modern high compression engines. Here is another example of why AP leads the field.

THE AP PARTS CORPORATION
1186 AP Building • TOLEDO 1, OHIO
Manufacturers of MUFFLERS • PIPES • MIRACLE POWER • dgf 123



Mufflers

COMMERCIAL CAR JOURNAL, May, 1952

CCJ News Reports

Continued from Page 31

sel of the Private Carrier Conference of the American Trucking Associations, Inc., representing private carrier interests.

The carriers contend that the bills in question would restrict private carriage and truck leasing, eliminate exempt commodity hauling, and impose federal regulation over sizes and weights of vehicles.

Also appearing before the committee were: J. B. Carey, of Chestnut Farms Chevy Chase Dairy, Washington, D. C.; Robert J. VanLiew, Blue Bell Inc., New York; S. James Campbell, of the Harry T. Campbell Sons, Inc., Towson, Md.; Donald E. Roberts, Carr-Consolidated Biscuit Co., Wilkes-Barre, Pa.; F. B. Hufnagel, Jr., Sun Oil Co., Philadelphia, Pa.; Robert E. Hawkins, Galligher-Huguely, Inc., Washington, D. C., and Vincent O'Donnell, secretary-manager of the Private Carrier Conference.

Makers Look to Leasing

Interest in truck leasing again appears to be on the increase. Truck manufacturers are beginning to show some interest in the possibilities of their dealers getting into the leasing business, and one of the larger ones has made a rather complete study of the whole question and is presenting its data to its dealers. It has prepared a rather elaborate presentation, citing the advantage to operators such as the savings in capital investment and tax advantages accruing from charging off all leasing fees as operating expenses. The company also has some figures on costs of operating trucks and passenger cars which show that these costs are not as high as is generally supposed. However, it still seems to be the prevailing opinion that an operator with a well-equipped and efficient maintenance set-up is economically better off to own and service his own equipment than he would be with leasing.

(TURN TO NEXT PAGE, PLEASE)

GE Goes LP



One of the first LP-205 Internationals went to the Fort Wayne, Ind., plant of General Electric. This unit is a 142-in. wheelbase tractor, the first model produced by International Harvester for propane-butane operation.

International also has another first—that of making the LP engine on a factory assembly line and having the engine listed as UL standard. The engines are available on all International models normally using the heavy-duty type gasoline engine.

CCJ News Reports

Continued from Page 111

Truck Fee Draws Publicity

When the Illinois Supreme Court upheld that state's increase in truck license fees for various weight classes, *The Chicago Daily News* published three pictures, labeled with the truck weight and the fees paid for stationary body, single axle semi, and tandem semi. While many truckmen consider

1952 Domestic Truck Factory Sales by G.V.W.*

	5,000 lb. and less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
January.....	30,803	15,649	4,873	16,666	4,909	8,323	3,971	85,194
February.....	30,518	15,506	5,055	17,416	3,856	8,239	3,980	84,570
Two Months—1952.....	61,321	31,155	9,928	34,082	8,765	16,562	7,951	169,764
Two Months—1951.....	93,642	37,969	13,115	31,724	10,204	10,977	6,465	204,096

*—Automobile Manufacturers Association.

that the pictures which took up a space 6 in. wide and 16 in. deep were a boost to a "sock the trucks" movement, they did prove one point—telling the highway motorist that trucks are paying their share of highway income.

From an ad appearing in the May 10 issue of Saturday Evening Post

"WE STAKE
OUR LIVES ON
MARQUETTE
WELDS!"



MODEL 70 SERIES
MARQUETTE AC WELDER

Here's the arc welder that goes to the races. In 4 years 1763 race car welds, without a failure. And now for the 5th straight year, Marquette is again official at the Indianapolis Motor Speedway.

At Indianapolis...
"WELD IT"
means MARQUETTE

When the chips are down... when their lives are at stake... famous race drivers have learned to depend on welds made with Marquette equipment. That's why again in 1952, the Indianapolis Motor Speedway has requested Marquette welding and battery charger service.

Put your confidence in that same equipment. Ask your distributor about Marquette.



MARQUETTE
REG. IN U. S. PAT. OFFICE

Welding & Automotive Service Equipment

MARQUETTE MANUFACTURING CO., INC. • 307 E. HENNEPIN AVE. • MINNEAPOLIS 14, MINNESOTA



SPARKY SEZ: "Your friendly Marquette jobber offers the best in profit-making welding and battery charging equipment."

1952 Truck Trailer Shipments*

	January 1952	December 1951
Vans		
Insulated and refrigerated.....	234	287
Steel.....	47	70
Aluminum.....	187	217
Furniture.....	123	140
Steel.....	123	140
Aluminum.....	1,392	904
All other closed-top.....	664	411
Steel.....	726	483
Aluminum.....	236	253
Open-top.....	114	168
Steel.....	122	85
Aluminum.....		
Total—Vans.....	1,085	1,584
Tanks		
Petroleum.....	492	479
Food.....	26	
L. P. G.....	11	68
All other.....	60	
Total—Tanks.....	589	542
Pole, pipe and logging		
Single axle.....	60	60
Tandem axle.....	78	50
Total.....	138	110
Platforms		
Racks, livestock and stake.....	221	156
Grain bodies.....	132	73
Flats (all types).....	514	558
Total—Platforms.....	867	788
Low-bed heavy haulers.....	550	506
Dump trailers.....	64	68
All other trailers.....	394	329
Total—Complete trailers...	4,587	3,947
Converter dollies.....	49	
Trailer chassis.....	313	268
Total—Trailers and Chassis	4,949	4,215

*—Industry Division, Bureau of the Census.

ATA Engages French

George N. French of Chevy Chase, Md., public relations executive and former newspaperman and editor, has been appointed public relations field representative for the American Trucking Associations, Inc., in the north-eastern states. He succeeds Edwin H. Spencer of Bethesda, Md., who has been transferred to a new post in ATA's public relations department.

Summer Institute Announced

A summer session for motor vehicle fleet supervisors will be held at Northwestern University, Evanston, Ill., by the University's Traffic Institute. The dates are June 23-27.

Francis P. Lowery of the Institute's training staff and Paul H. Coburn, director of the National Safety Council's Motor Transportation Bureau will be the course coordinators. The course is open to representatives of all types and sizes of fleets.

(TURN TO PAGE 114, PLEASE)

Total
85,194
84,570
189,764
204,096

nfs*

December
1951

287
70
217
140
140
904
411
493
253
188
85

1,584

479

68

542

60
50

110

156
73
589

788
508
88
329

8,947

208

215



LINE CONSTRUCTION BODY (600C)

This workhorse of the utility industry can be furnished in lengths from 9' to 14' for any type of utility construction work.



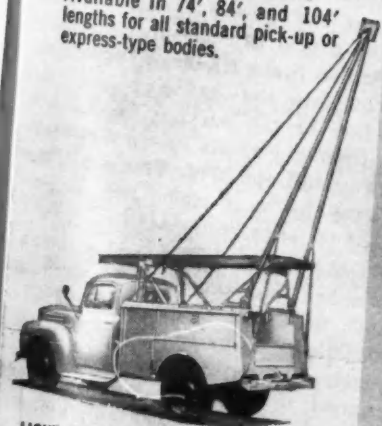
REVOLVING AERIAL LADDER

Models available in working heights of 23' 6", 26' 6", 30' 6", and 32' 6" for all styles of bodies.



COMPARTMENT SECTIONS

Available in 74', 84', and 104' lengths for all standard pick-up or express-type bodies.



LIGHT DUTY MAINTENANCE BODY (350)

This compact unit is widely used for service and light duty construction. Fold-over derrick can handle 40' poles.

There are many styles of Powers-American Bodies not shown here. Write for descriptive catalog today.

"The Accepted Standard with Utilities Everywhere"



GENERAL SERVICE BODY

Available in a wide range of body styles to fit operating requirements in all phases of the utility industry. Models can be furnished for 1/2, 3/4, 1, and 1 1/2 ton chassis. Compartments can be equipped with shelves, bins, and accessories to suit individual needs.



The 1 Source for all types of utility bodies and equipment!

There's no need to look further than Powers-American to solve all your utility body and equipment needs. Whether the job calls for a small service body for repair work, a line body for large construction jobs, or special equipment such as towers or ladders, Powers-American is your answer.

Leadership in construction, maintenance and service work in all phases of the public utility industry guarantees long life and trouble-free service. Write today for more information.



PUBLIC UTILITY BODIES AND EQUIPMENT

INCORPORATED AUTO BODY COMPANY

1000 N. Broadway, St. Louis 14, Mo. - Eastern Square, Inc., 1000 N. Broadway, St. Louis 14, Mo.



CCJ News Reports

Continued from Page 112

Mail Camel

The odd-shaped unit shown here is becoming a familiar sight in many states where total length limits permit. It is a mail car, mounted on an extended frame of a COE tractor followed by a semi of conventional design. The Salt Lake-Kanab Freight Line uses it on a mail contract, on a run of 331 miles in each direction or 662 miles each day. The run involves congested urban traffic and mountain passes to 7600 ft. It interlaces 70 post offices in six counties, reaching a population of 75,000. Each day 15,000 lb of mail is handled.

To Hold Road-Check

A national road check will be held during the week of May 11 through 16 by the AFofL Teamsters Union. Check points will be set up on highways across the nation. During that period, drivers will be stopped and questioned about union membership and their working conditions.

Jersey Has New Toll Road Laws

Bills providing for completion of the 165-mile Garden State Parkway as a toll facility were given final passage by the New Jersey Legislature (April 4) just prior to concluding its 1952 session.

One of the measures approved and sent to the governor for signature creates a new three-member authority within the State Highway Department to complete the financing and construction of the parkway, which will run from the north Jersey metropolitan area to Cape May. Free use of the parkway by local traffic will be permitted on some sections.

A companion bill provides for a November referendum on placing the state's faith and credit behind \$285,000,000 of revenue bonds proposed for financing the parkway project. This is designed to attract a lower interest rate on the securities than would otherwise be possible.

Pennsylvania Kills Weight Treaty

The end has come to a long-standing agreement between Pennsylvania and Delaware which permitted Delaware truckers to exceed Pennsylvania weight limits by as much as 7½ tons. State Revenue Secretary Otto F. Messner said that in view of the fact that similar

(TURN TO PAGE 116, PLEASE)

**you're
being
robbed!**

when your drivers light

these

Your profits are being wasted when your drivers light these flares by the roadside. Add up the interest on your investment, overhead, idle men being paid — every hour lost is a needless drain on your income.



Install Autopulse Electric Fuel Pumps and you can forget a frequent cause of lost time, stalling due to vapor lock. Autopulse can be installed anywhere between the fuel tank and the carburetor, does not need to be placed right over the hot engine, and because it is a *pusher pump* and does not draw the fuel to the engine it keeps your vehicles on the job. In the hot summer weather or in the dead of winter you are sure of instant starting — you can meet deliveries "on the nose." See your Autopulse dealer today or write for illustrated folder.

install an Autopulse electric fuel pump

AUTOPULSE *the heart of your motor*

AUTOPULSE CORPORATION 218 E. Dowland St., Ludington, Mich.

P. I. E. REPORTS:

"We replace all oil seals at each preventive-maintenance inspection"



J. W. Riesing
Superintendent of Fleet Maintenance
Pacific Intermountain Express Co.

Pacific Intermountain Express, one of the nation's largest truck fleet operators, replaces all oil seals in an assembly during routine inspection and rebuild. National Oil Seals are stocked in P. I. E. shops to facilitate replacement. Superintendent of Fleet Maintenance Riesing says:

"Time and labor to remove, repair and reinstall assemblies which have malfunctioned is far more expensive than rigid preventive maintenance which includes new oil seals at each inspection. The dependability of National Oil Seals helps us maintain 150,000-mile inspection intervals. National seals are doing an outstanding job."

Whether you're operating hundreds of highway units like P. I. E. or a 3-unit local delivery service, service dependability is vital to your pocketbook. Do as America's leading fleets do—replace with new National Oil Seals every time an old seal is removed for any reason!



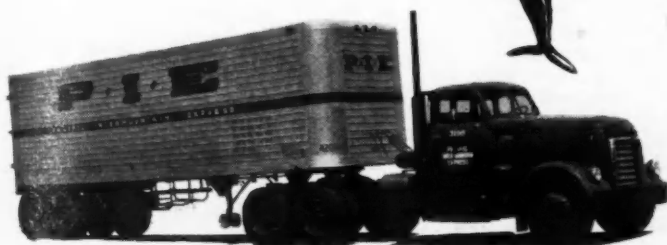
OIL SEAL STOCKS TAILORED FOR YOUR FLEET

For greater shop efficiency and less down time, let your parts jobber put in a National Oil Seal Stock, custom-tailored to your needs. He keeps the stock up—no extra work for you.

NATIONAL MOTOR BEARING CO., INC.

General Offices: Redwood City, Calif. Plants: Redwood City, Calif., Van Wert, Ohio

"Every time you take out an oil seal, replace it with a new National seal"



2442



Approved original equipment for all cars, trucks, buses and tractors.

**"This one clamp
saves a dozen trips
to the stockroom"**



"Aero-Seal" WORM DRIVE HOSE CLAMPS

No need for a trip to the stockroom for a clamp to tighten a leaky hose. Overhaul after overhaul, season after season, the mechanic simply replaces the worn hose and re-uses the same Aero-Seal Hose Clamp.



WON'T CRIMP—CAN'T LEAK

Worm drive applies even pressure all round the hose. Smooth saddle prevents cutting. No crimping—Aero-Seal can be replaced in any position. Three threads of worm always engage deep into slots of stainless steel band...hold hose tight over a million miles of roads!

REPLACE ANYWHERE—ANY TIME



A man can install an Aero-Seal any place he can reach with thumb and finger. Integral construction—no parts to lose. Self-feeding when worm engages band. Screw-driver slot or thumb grip screw styles. Tighten with a twist of the wrist.

Use of stainless steel subject to government regulations.



BREEZE CORPORATIONS, INC.
41 South Sixth St., Newark, N. J.

CCJ News Reports

Continued from Page 114

lar exemption has not been granted by the Commonwealth to other states, there appears to be no justification for retaining such exemption in discrimination against other states and residents of Pennsylvania.

Georgia Rates Increase

An increase of 6 per cent in Class A intrastate motor carrier freight rates in Georgia, effective April 7, was granted by the State Public Service Commission. Georgia motor carriers are expected to receive an estimated \$300,000 in additional annual revenue from the rate boost. An interstate increase was scheduled to go into effect on the same date.

The Georgia PSC granted the motor freight carriers a 4.8 per cent rate boost on March 10, but the truckers complained that stiff increases in labor costs at about the same time more than offset this increase. They had asked for an additional 10 per cent.

Kentucky to Get Fines

Under a new Kentucky law, effective June 20, fines and forfeited bonds collected from truck drivers arrested by city police on state-maintained highways under state laws governing size and weight of trucks will go to the state.

Proponents of the amendment to the state's truck laws said it was intended to break up a "racket" in several cities. Governor Wetherby permitted the measure to become law without his signature.

(TURN TO PAGE 208, PLEASE)

Truck Loader



Something new in the way of a dump truck loader has been introduced by Efficient Equipment Co., Chicago. It is a hydraulic body-mounted rig consisting of an attachable shovel, magnet, bucket or platform which lifts a load from ground level to the proper body position. Designed by the manufacturer with rubbish hauling and garbage disposing units in mind, the loader has been adapted to other types of truck applications. Controls for the truck and loader unit are located at a seat position on top of the truck cab.

Budd Wheel Distributors provide the same service described in this advertisement

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Wheel, Rim & Parts Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.

CHARLOTTE—Carolina Rim & Wheel Co.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service, Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
EVANSVILLE—Auto Wheel & Rim Service Co., Inc.
FARGO—Wheel Service Company
FORT WAYNE—Wheel & Rim Sales Co.
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Rim & Wheel Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel & Equipment
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Co., Inc.
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robbles', Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co., Inc.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel & Equipment
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robbles', Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
ST. PAUL—Wheel Service Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robbles', Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.
WINSTON-SALEM—United-Automotive Service

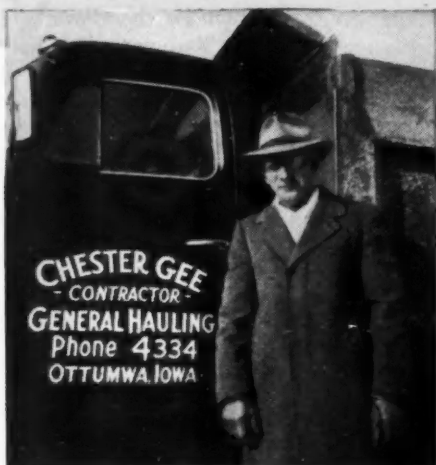
EXPORT

CLEVELAND—C. O. Brandes, Inc.

CANADA

CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—Auto Wheels & Supplies, Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.

COMMERCIAL CAR JOURNAL, May, 1952



THIS MAN SAYS: "NEVER AGAIN!"

Chet Gee, contractor, of Ottumwa, Iowa, claims he's a hard man to sell. So naturally Harry Cutler felt good when Chet agreed to follow his recommendation to change over his fleet* to Budd Wheels with wide base rims. Harry represents the Des Moines Wheel & Rim Co., Budd wheel distributors.

This happened a little over a year ago. At the same time they made the change-over they stepped up from ten-ply to twelve-ply tires.

Result? Stopped wheel breakage and lengthened tire life, which had been 30,000 miles, to as high as 90,000 miles!

Can't blame Chet for saying: "I'll never put another truck on the job without the right Budd wide base wheels."

Finding the right wheel and tire combination for the job calls for a lot of experience and *knowing wheels*. And that's what Budd distributors have. On top of that, in Budd wheels they've got the only complete wide base line. They can meet any requirement exactly. Call up the distributor near you—he's listed in the column at the left—and have him inspect your equipment.

The Budd Company, Detroit 14



*Specify and Standardize
on Budd Wheels*

Oil Analysis Guides Fleet PM

Continued from Page 63

Thus, a timely report can save the extra cost of overhaul—or can save several times the cost of the analysis in fuel economy alone.

Let us examine the records of several large and well-known fleets to determine what results they have obtained by using the Faber analyses.

Mr. C. L. Parsons, director of trans-

	No. of Analysis	No. of Mech. Faults	% of Mech. Faults	No. of Filter Faults	% of Filter Faults
January	95	9	9.48	45	47.4
February	60	1	1.67	32	53.3
March	101	5	4.95	36	35.6
April	74	3	4.06	21	28.4
	330	18	5.46	134	40.6

portation for the Cloverland Dairy located in Baltimore, Md., has been using Faber Analyses for many years as an aid and a money-saving device to an excellent preventive maintenance sys-

Thomson has the Stats



Thomson is the one thermostat line that fills the most of your requirements. Included in Thomson's new and broader line are 21 heavy-duty numbers—standard, high and medium high temperatures—fitting practically all the big trucks and engines. And Thomson's line for cars and light trucks covers them all—down the line. Ask your NAPA Jobber for Thomson... *electro-fused* for extra dependability and service.



STANDARD-THOMSON CORPORATION • DAYTON 2, OHIO

tem. Mr. Parsons has a shop equipped with every conceivable maintenance tool, including a complete set of tune-up instruments. With this tune-up equipment, Mr. Parsons is able to take advantage of every recommendation and finding resulting from used crank-case oil analyses. A rigid sampling schedule is maintained, in which a sample is submitted from every engine in his fleet every 60 days. Samples are taken every 30 days from the engines which show poor conditions.

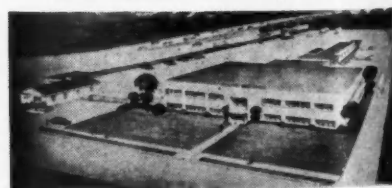
Last year, a four-month survey was made, to compare the conditions in his fleet with other fleets operating similar units in this type of work. The results were as follows:

It has been estimated that these figures, largely because of decreased labor costs, represent a yearly saving of \$1,422, including the cost of Faber analyses, as compared to similar fleets employing a preventive maintenance system but not using oil analyses.

Mr. J. E. Donahoe, fleet supt., of Green Springs Dairy of Baltimore, Md., has achieved some rather amazing results with consequent large dollar savings. This dairy fleet employs a Faber

(TURN TO PAGE 120, PLEASE)

New Allied Headquarters



Allied Van Lines held open house in a new terminal and general offices, 25th Avenue & Roosevelt Rd., Broadview, Ill., officially marking the beginning of operations at the new location. The site was selected partly because it will no longer be necessary for cross-country vans to cope with downtown city traffic. One of the practical results which Allied officials hope will be attained by having the Terminal at its new site is that of faster servicing of shipments. It is situated at such a point that all major highway arteries going in and out of Chicago are readily accessible.

Cummins[®]

CUSTOM BUILT

Diesels

ARE PRECISION TENSIONED



● One of the big reasons for the high reputation of Cummins Diesels is the *extra* care Cummins uses in building its engines. For example, each Cummins Diesel is run in after assembly, then completely disassembled for reinspection. Then it is carefully reassembled and tested again. In *both* assembling operations, Snap-on Torqometers are used to assure complete accuracy of tensioning.

In the maintenance of any engine...gasoline or Diesel...Torqometers should be used *wherever bolt torque is specified by the maker*. Torqometers are time-and-money savers...the mechanic works swiftly and confidently...he *sees* the applied torque...hits the specified pressure every time!

Snap-on Torqometers are built in 15 standard models, capacity from 0 to 30 inch-pounds up to 2,000 foot-pounds. Try the Torqometer right in your own shop...ask your Snap-on Man on his next call. Write today for your Snap-on Catalog of more than 4,000 Snap-on hand and bench tools.

SNAP-ON TOOLS CORPORATION

8026-E 28th Avenue, Kenosha, Wisconsin

* Snap-on is the trademark of Snap-on Tools Corporation



Used Oil Analysis

Continued from Page 118

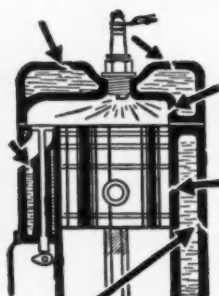
Sampling Schedule to indicate when samples are to be drawn and from which vehicles, as well as when each vehicle is to be inspected. An inspection is called for ten days after each sample is taken. With this schedule, therefore, it is never necessary to call a vehicle off the road to apply the results of an analysis. All used oil analyses reports are held until the

vehicles are called in for inspection, in this manner no tune-up work is done at inspection periods unless specifically called for by the analyses. By comparing the months of August, September and October of 1950, when this system was not in use, as against the same months of 1951 we find the following:

	1950	1951
Road Failures	49/month	43/month
Tune-ups	88/month	8/month
Filter Changes	90/month	58/month
Oil Changes	83/month	43/month
Fuel Mileage	5.5 mpg	5.7 mpg
Oil Mileage	189 mpg	211 mpg

LUSCO PLASTIC SEAL

The AMAZING CHEMICAL containing SEALIUM
(an exclusive product of LUSCO, Inc.)

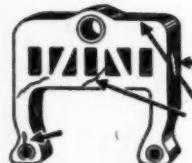


Repairs all kinds of cracks in motor heads and blocks including **CRACKS DIRECTLY INTO THE COMBUSTION CHAMBER**
(available in 'HEAVY DUTY' \$3.00 per pint list)

Repairs radiator leaks just as effectively or more so and just as permanently as a solder job. (available in 8-oz. cans \$1.00 list)

Works perfectly in water, alcohol and glycol. Is an excellent cleaner as well as a phenomenal sealer.

Makes possible amazing leak repairs in high pressure industrial boilers as well as low pressure steam heating boilers. (available in one gal. containers 'Heavy Duty' or special Heavy Duty)



LUSCO Seal-Wel CUBES (18 years in the market)
The World's best low priced radiator seal at 30¢ per CUBE list. May be sold with "GUARANTEED 90 DAY SERVICE." The conditioner and leak-proofing material that should be included with the liquid in every motor circulating system. Makes a motor run better. Insures anti-freeze installations.



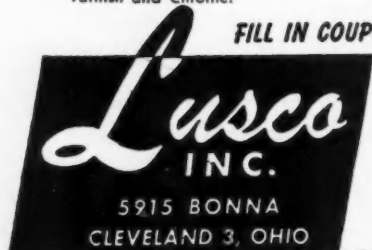
The LAZY MAN'S POLISH

LUSCO-vize
The World's best standard Polish for AUTOS — FURNITURE — WINDOWS (and all smooth finishes) "CLEANS TO THE ORIGINAL FINISH"

SIL-vize
The SUPER POLISH containing 6% SILICONE (water-emulsified) Cleans and 'Siliconizes' car finishes for one year lasting qualities

These are our claims for The LAZY MAN'S POLISH, either LUSCO-vize or SIL-vize. It is the fastest and easiest product to use and gives super results. It may be applied in brilliant sunlight, over wet surfaces, over the entire surface before wiping off, does not stick, streak, or fingerprint. Works perfectly on Duco, Paint, Enamel, Synthetics, Varnish and Chrome.

FILL IN COUPON BELOW



LUSCO, Inc., 5915 Bonna Ave., Cleveland 3, Ohio

Enclosed is my letter head (or bill head). Please tell me how I can secure three cans FREE for trial. I am interested in:

☐ LUSCO PLASTIC SEAL for
☐ The LAZY MAN'S POLISH

☐ Please RUSH me C.O.D. Parcel Post prepaid three boxes LUSCO Seal-Wel CUBES\$6.48

Name
Position (please print)

Deducting the cost of the oil analyses and the labor cost for securing samples it was found that these improvements resulted in a \$2,800 yearly net saving.

Another very large dairy operation, that of Borden's Farm Products of New York, has been using this service for many years. Mr. George Downing, supervisor of vehicle maintenance, for this fleet, schedules sample taking much the same as Green Spring Dairy. Thus it becomes a guide to the maintenance of more than 1300 vehicles. When oil analyses was first started, the results revealed an average of 38 engine abnormalities per 100 vehicles. By the complete cooperation of supervisors and mechanics in the timely correction of the faults indicated by these diagnoses, this company has been able to reduce this to an average of 9.5—a drop of 77 per cent in engine defects.

United Parcel Service has been using the service for many years. Their feelings may best be exemplified by quoting from an article prepared by Mr. Walter Hurferth, of United Parcel Service:

"By having the oil samples analyzed we are advised what engine operating conditions are not correct and are therefore causing the accumulations of harmful contaminants in the oil and other conditions, such as dilution and water. We are also told which engines are operating properly and are clean and therefore require no attention. This saves the time which might otherwise be spent inspecting engines."

"The service of Faber Laboratories is used to aid us in maintaining our engines in efficient operating condition and thereby achieve economy in operation and maintenance."

(TURN TO PAGE 123, PLEASE)

Trout Truck



Transporting fingerlings over long distances of rough mountain terrain. Chevrolet trucks with especially designed safety provisions for their cargo are at work for the Wyoming game and fish commission. Wardens load one of the trucks with two-inch fish at a state hatchery for a trip that may be as long as 400 miles. The trucks often carry 4500 baby fish without loss of life due to such precautions as aeration pumps, water buffer plates in the tank and water-cooling units.

With the cooperation of Mr. Wheeler, treasurer of Larsen Baking Co., located in Brooklyn, New York, a check of the gasoline consumption of his fleet revealed the following—after oil analysis had been in use for approximately one year.

Location	January, 1949 (without oil analysis)	January, 1950 (with oil analysis)
Hackensack	8.6 miles/gal.	10.1 miles/gal.
Jamaica, L. I.	7.8 " "	8.1 " "
Staten Island	7.1 " "	8.6 " "
Brooklyn	6.8 " "	7.2 " "

Averaging these figures we found that for the month of January, 1950, 0.9 miles per gallon more was obtained for the total fleet than in the month of January, 1949. Relating this to dollars, this increase represented a saving of slightly more than \$350 per month in fuel costs. The monthly cost for oil analysis in this fleet is \$144.

It was also determined that:

1. The manpower had not been increased or decreased.
2. No new vehicles were added during the interval in question.
3. Only an average number of overhauls were completed.
4. The fuel and oil suppliers remained the same, and
5. A tabulation of climatic conditions taken from the United States Weather Bureau revealed that there was:
 - (a) A variance of only 3 deg between the two periods.
 - (b) 5 days of snow in January, 1949.
 - 6 days of snow in January, 1950.

Some results of used oil analyses have been shown above as a result of using oil analysis in local delivery fleet operation. This, however, covers only one phase of the fleet picture as there are still bus fleets and over-the-road fleets to be considered. To indicate the results obtained by these other classes of operators, we have chosen two well-known over-the-road operators and one of the largest bus operations in Canada.

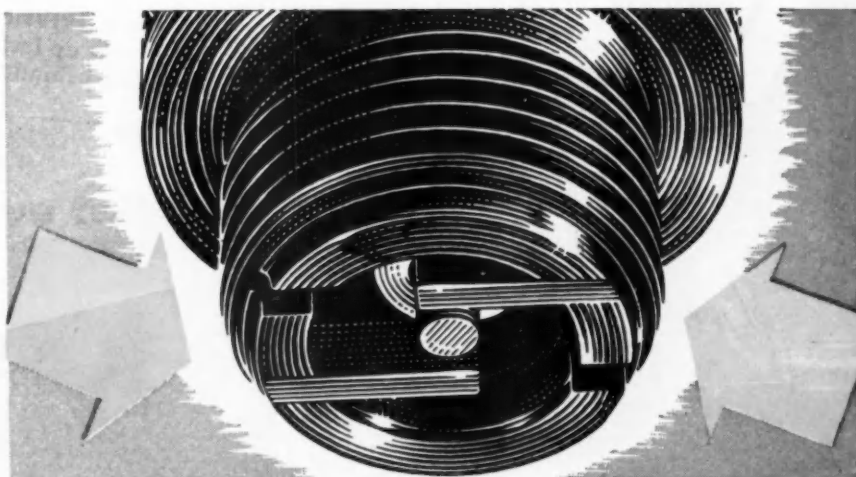
Mr. Ward Bennett, superintendent of automotive equipment, for Baltimore Transfer Co., indicates—"The maintenance department uses the Faber Laboratories oil testing service in two ways. On road tractors, the oil sample is taken at the regular drain period which is the same as the lubrication schedule. The engine oil used in all engines meets the detergent heavy-duty oil specification 2-104B. On the road tractors, the reports are not used as a basis for draining, but the analysis reports give us indications of potential clogging of oil rings, improper combustion, low or high crankcase operating temperature, water emulsions, incorrect filter operation and any excess of metal particles.

Used Oil Analysis

Continued from Page 120

"On local, city delivery trucks, the samples are taken two weeks before the scheduled oil change. This is ample time for the samples to be analyzed and reported back before the regular shop inspection. Oil reports give the shop valuable details regarding engine conditions which might be observed in a regular mechanical inspection. On the basis of the reports, there has been some trend towards increasing the

(TURN TO PAGE 125, PLEASE)



NEW Double-Duty SPARK PLUGS FOR Heavy-Duty USE!



Here's the new spark plug you've been hearing about—Hastings Aero-type Shrouded. The electrodes are completely protected from the hot flame sweep. And there are two electrodes to give you at least twice the electrode life. The insulator is H. T. Aluminum Oxide, dissipates heat faster. Each plug has a solid copper non-loosening gasket that won't shrink in service, and is performance rated like the aircraft plug. Each is X-ray inspected and high-voltage tested.

Here at last is a double-duty spark plug for heavy-duty jobs—a plug that cools better, runs cooler, lasts longer in replacement service. Write for illustrated catalog.

DEPT. C • SPARK PLUG DIVISION • HASTINGS MANUFACTURING CO. • HASTINGS, MICH.

HASTINGS

Aero-type  SHROUDED Spark Plugs

TIMPTE
DENVER

Sleeper Cabs mean more profit for YOU!



I'M AN OWNER—"Thanks to Timppte Sleeper Cabs, loads move safer, faster. I make more profit with less risk."



I'M A DRIVER—"With my Timppte Sleeper Cab, I wake up feeling great. My driving is better and I'm never behind schedule."

**Get every load there...
SAFELY—SURELY!**



Good sound sleep earns a profit in the trucking industry because drivers that are refreshed move pay loads safer and faster. You'll have better drivers, too, in a no-draft, roomy Timppte Sleeper Cab. Write today to learn how Timppte Sleeper Cab can mean more money in your pocket.

TIMPTE
DENVER

TIMPTE BROS., INC.

40th & York Sts., Denver, Colorado
Phone Cherry 6486



**ALL
NEW**

Construction Features:

1. Auto body steel exterior
2. Sturdy riveted construction
3. One-piece welded top
4. Insulated top
5. Streamlined top and body radi
6. Plywood lining
7. Extra roominess
8. No-draft ventilators
9. Separate tool and luggage compartment
10. Two doors each side
11. Sealed cab connection
12. Internal safety locks
13. Readily adapted to any truck chassis

Used Oil Analysis

Continued from Page 123

period between crankcase drains, but this change is being made slowly.

"From quarterly reports submitted by the Faber Laboratories, it is possible to further check upon the operation of the branch shops. The oil analysis on vehicles domiciled away from Baltimore rather clearly indicates whether oil filters are changed regularly and whether the filters are kept working."

"Excessive water in drainings indicates bad mechanical conditions, excessive dilution may indicate bad carburation, and other defects are indicated by discernible symptoms which show up in the oil analysis reports." Mr. Bennett believes these oil analysis reports give him a quick over-all picture of the conditions in the engines of his fleet, and since engine operation is an important factor in successful operation this criteria reflects in one way, the general shop operations.

Mr. Hal Royle is superintendent of maintenance for one of the largest and finest bus operations in Canada, the Montreal Tramways Commission. Mr. Royle is directly responsible for one of the most excellent bus maintenance systems in Canada or the United States. He introduced the Faber service to his maintenance system in an effort to achieve savings, improve present methods and to obtain a continuing and real picture of the efficiency of his operation. In a recent report on Faber Service prepared by Mr. Royle and his staff the following points were made:

Faber Service:

1. "Provides a useful tool for spot checking the engine conditions of the buses."
2. "Has readily detected excess wear on engines."
3. "Has made it possible to improve the condition of many engines."
4. "Has permitted us to make corrections as necessary on buses."

In addition the periodic reports prepared are of great assistance in helping to evaluate maintenance from one period to another.

To show further the importance of oil analysis and its worth, as found by Mr. Miller, superintendent of equip-

High Finance

Carburetor Specialist: "How can you do things like that? You got tight last night and sold the City Hall Building."

Ignition Specialist: "Well, what's it to you. What are you so mad about?"

Carburetor Specialist: "I bought it!"

ment and Mr. Robert Green, manager of Coastal Tank Lines, located in Baltimore, Md., the so-called shocking items reported by Faber Laboratories during a 12-month period were tabulated as follows:

- a.) 11 ring sticking conditions.
- b.) 4 engines with clogging oil ring slots.
- c.) 1 engine with an abnormal amount of sand.
- d.) 2 bearing conditions were revealed.
- e.) 1 engine appeared with an abnormal water condition.

These conditions do not reflect an abnormal percentage of such conditions, but they do represent a definite saving as a result of preventive maintenance steps which the operator was able to accomplish through the use of oil analysis. In this particular fleet, it is of interest to note that in each case where these conditions appeared, they were caught and corrected immediately before costly damage resulted.

END

Please Resume Reading Page 64

MONMOUTH * *first with the finest*



The ABC's of CLEVITE* 77

ADVANCED DESIGN AND CONSTRUCTION

BBETTER SURFACE ACTION

COMPARATIVE PERFORMANCE UNEXCELLED

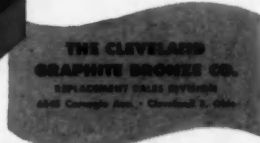
CLEVITE 77's should be used only where engine manufacturers' specifications call for Clevite 77, that is, in those specific applications where engine characteristics, load and operating conditions require bearings with great fatigue resistance.

Truck and bus fleet operators, racing cars, contractors' heavy off-the-highway equipment require the kind of engine bearing performance that Clevite 77 alone can give.

For replacement use, Clevite 77 bearings are sold under our Monmouth Brand. SPECIFY MONMOUTH!



*The words Monmouth, Clevite and Micro are registered trade marks of The Cleveland Graphite Bronze Co.



CGB FIRSTS: The development of continuous strip casting, 1929—thinwall babbit lined steel-backed bushings, 1931—continuous casting of copper lead on steel strip, 1934—tri-metal bearings, 1938—Micro* Bearings, 1939—Clevite 77, 1944—and others which have helped to revolutionize the lined bearing industry.

GMC Introduces New Engine

Continued from Page 66

New Diesel Models

THREE new diesel models have been announced—the D470-37, the DW-450-37 and the DW620-47. Lighter chassis weights and improved aluminum wheels characterize these models. The D470-37 answers the need for light weight, low cost diesel power in the 21,000-lb GVW, 45,000-lb GCW field.

Chassis weight is 1400 lb lighter than other models in this capacity range. Dayton wheels are standard. Six-stud Motor wheels and 10-stud Budd wheels are optional. Brakes are full air type.

The DW450-37 has ratings of 26,000 GVW and 38,000 GCW. Standard transmission is the Clark 204V0. The Spicer 5531B auxiliary is available at extra cost. CA dimensions of 72, 84,

102 and 120 inches are available. Front axle is the Eaton 485 of 6000 lb capacity, and rear axle is the Eaton 22M. Brakes are the new "Air-Pak" air-actuated hydraulic type.

The DW620-47 is a new light weight, tandem axle diesel with an 8000-lb Eaton front axle as standard equipment. Rear axle is the Eaton 28M dual drive. CA dimensions of 72, 84, 10s and 120 inches are available. Dayton wheels are standard. Base tires are 9:00/20, and optional tires are 10:00/20. GVW is 33,000 lb. GCW is 55,000 lb.



Have You an Overtime Problem? Is Overtime getting to be a habit with your truck?

The little *Servis Recorder* is the answer to your problem. Attached up in the cab, its chart tells you daily every move the truck makes—all stops and delays, day and night—and overtime too.

Now, most overtime is caused by delays due to the truck *standing idle* at times during the day. Look at the chart shown above—note the two-hour stop—the truck was standing somewhere from 2 to 4 in the afternoon. No wonder it didn't get in until nearly 7!

Of course, it may not have been the driver's fault—not all delays can be laid to him. But you want to *KNOW*; expensive Overtime is just another burden on your high trucking costs.

Write for the *Servis Recorder* story today. THE SERVICE RECORDER CO., 1375 Euclid Ave., Cleveland 15, Ohio.



The Servis Recorder

Shows Busy and Idle Time... All Day

ENGINE DESIGNATIONS

ENGINE MODEL	DESIGNATION
GASOLINE	
228	22
248	24
302	30
360	36
426	42
503	50
DIESEL	
3-71	37
4-71	47
6-71	67

GMC Model Letter Designations

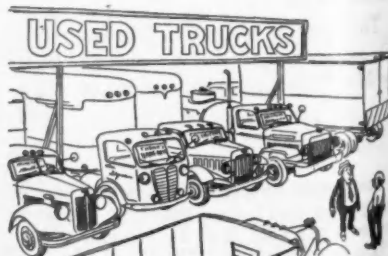
- F—Cab-over-engine model
- D—Diesel engine
- M—Automatic Transmission
- P—Forward-control model
- W—Six-wheel model

Condensed Truck Data

New Model	Old Model	Former GVW	New GVW
450-30	HC-450	19,000	19,500
F450-30	.....	34,000	35,000
470-30	.....	20,000	21,000
F470-30	.....	20,000	21,000
620-36	HCR-620	22,000	22,000
630-36	HC-700	.....	28,000
630-42	HC-640H	27,000	28,000
740-50	HC-740	.....	.....
750-50	HCR-750	.....	.....
F750-50	HCFR-750	.....	.....
850-50	HC-850	35,000	38,500
W450-30	HCW-400	24,000	26,000
W620-42	HCW-620	32,000	33,000
W630-50	HCW-720	38,000	42,000
W850-50	HCW-850	55,000	57,000
D450-37	.....	.....	19,000
D470-37	.....	.....	21,000
D630-47	.....	.....	28,000
D740-47	HDCR-740	28,500	28,500
D750-47	HDCR-750	.....	.....
DF750-47	HDFR-750	.....	.....
D920-67	HDCR-900	26,000	28,500
D930-67	HDC-900	.....	28,500
DW450-37	.....	.....	26,000
DW620-47	.....	.....	33,000
DW630-47	HDCW-750	38,000	42,000
DW970-67	HDCW-970	55,000	57,000
DW980-67	HDCW-980	.....	.....

END

Please Resume Reading on Page 67



"I need a couple of decoys for a roadside diner."

WHO SAID ?

"sludge and metal failure just had to exist"

They certainly "found out different" at Harry F. Atkinson & Sons of Philadelphia, as you can tell from the exact words of Charles H. and Joseph B. Atkinson . . .

"We are haulers for the textile trade and have been in business since 1914. We now have a fleet of varied equipment, such as straight jobs and tractor trailers, and in all these years we have tried many oils and had resigned ourselves to the fact that sludge and metal failure just had to exist.

"A few years ago, we changed to your C-800 Heavy Duty Oil, and after a period of time we were really amazed at the results. Sludge is at a minimum and we have increased our oil mileage tremendously. With results like this, we could do nothing else but use C-800 in all our equipment."

As you haulers say, "Safety is No Accident," and here you can see that neither is economy! You're specifically planning economy when you get the proof of the products from Cities Service. Write us or call the nearest office. CITIES SERVICE OIL COMPANY, Dept. E2, Sixty Wall Tower, New York City 5.

CITIES SERVICE



From a Mack to a Dodge, every Atkinson unit is Cities Serviced for the sake of the truck and the business.

UNIVERSITY OF MICHIGAN LIBRARIES

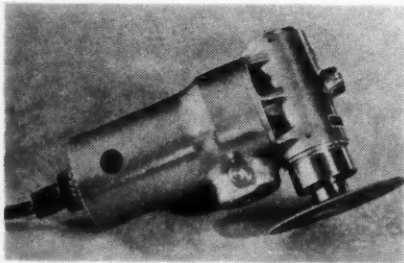
New GVW
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for a road-

New Product Descriptions

Continued from Page 77



P232. Disc Grinder

Here's a 9-in., 4½-lb disc grinder for use in paint or body work. It develops 8000 rpm, has an outside diameter of 2¾ in., and operates on 110 v ac or dc. The "Diskette" comes furnished with three composition disks, 4 in. in diameter of varying grit. Other attachments include an aluminum

safety guard, a flexible rubber disc mount for aluminum oxide discs, rubber pads for adhesive-coated discs, a collet chuck, a spindle, and bench stand which are classified as extra equipment. Available from Belmar Corp., Baltimore, Md.

P233. Arc Welders

A redesigned group of arc welders has been announced by Metal & Thermit Corp., New York, that incorporates three important changes. The welders are insulated with silicon; there is a lower open circuit voltage with arc stabilization accomplished by capacitors in the secondary circuit which provide an extra surge of current if the arc starts to go out, and the third feature is an automatic hot-start which makes the arc striking easier by providing the right amount of current boost.



P234. Puller Set

A complete master puller set that includes a new type of storage rack has been announced by Plomb Tool Co., Los Angeles, Calif. The sets are mounted on the rack in individual parts, labeled, so that a particular assembly may be made at the time it is needed. The manufacturer has said that this is an advantage, because several of the parts are interchangeable, providing several puller combinations rather than several complete assemblies. The set is known as Proto No. SD6 "Pullermart."

P235. Exhaust Fans

These square, flush-to-wall type exhaust fans suitable for office or shop have a two-speed quiet motor, direct drive, protected by a metal grille. The fan blade, smaller in diameter and deeply pitched, will move 3500 cu ft of air per minute, with an effective range up to 8000 cu ft. Baldor Electric Co., St. Louis, Mo.

P236. Hex Sockets

A series of combination hex sockets for use with Budd wheel nuts has been added to the line of impact sockets, extensions and adapters produced by Apex Machine & Tool Co., Dayton, Ohio. The nose end of the combination socket will accommodate either 13/16-in. square nuts or 1½-in. hex nuts, eliminating the need for changing

(TURN TO PAGE 130, PLEASE)

DID YOU KNOW?
:

DID YOU KNOW?

Although it is often difficult to see for more than one hundred yards in the Arctic an ordinary conversation can be heard two miles away.



MOLD-BLOK
BRAKE LINING

Did you know that years of research and experience in the heavy-duty braking field have gone into Mold-Blok? It is available in a friction range necessary to give you the best possible service. Specify Mold-Blok Brake Blocks for all jobs—old and new—it is a thoroughly dependable product.



Specify
MOLD-BLOK

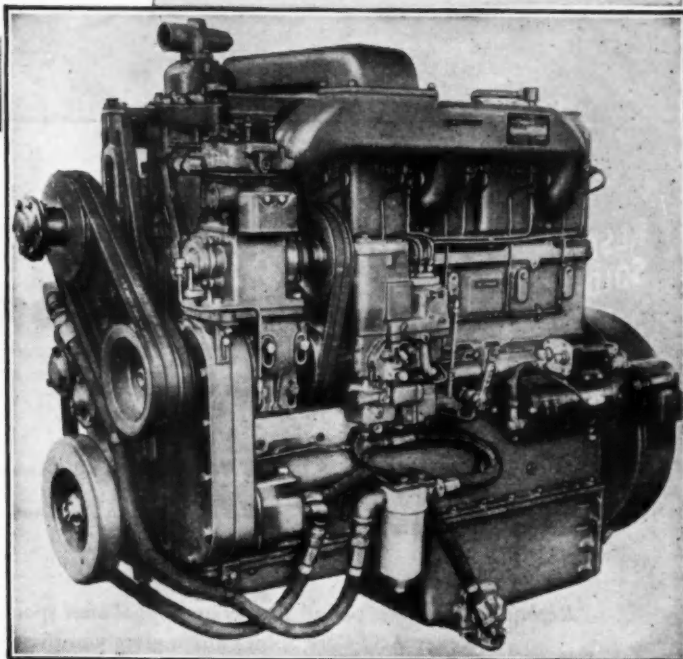
MOLDED MATERIALS DIVISION
OF
CARLISLE CORPORATION
RIDGWAY, PA.

FLEXIBLE HOSE LINES

WITH DETACHABLE,
REUSABLE FITTINGS



Always first
ON DIESEL ENGINES



Save time, save money and reduce inventory by putting the "Aeroquip Idea" to work for you. With Aeroquip you make your own flexible hose assemblies by cutting bulk hose to desired lengths and attaching Aeroquip Reusable Fittings. Assembly can be accomplished quickly and easily right on the job. No special tools are required. No training is needed. Aeroquip high quality Flexible Hose Lines improve performance and reduce maintenance. They eliminate leaks due to vibration and operate dependably at extremely high or low temperatures. They are widely used for hydraulic fluid, water, air, lubricating oils, gas and Diesel fuels and many other fluids.



*B.D.
check into this
money saving
idea - J.B.*

AEROQUIP CORPORATION

JACKSON, MICHIGAN

SALES OFFICES: BURBANK, CALIF. • DAYTON, OHIO • HAGERSTOWN, MD. • HIGH POINT, N. C. • MIAMI SPRINGS, FLA.
MINNEAPOLIS, MINN. • PORTLAND, ORE. • WICHITA, KAN. • TORONTO, CANADA

AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

Because this Diesel Engine is plumbed with Aeroquip Flexible Hose Lines, replacement of any fluid-carrying line can be accomplished in a fraction of the time required for forming and fitting rigid tubing. Aeroquip Hose Lines are fire resistant and eliminate failure due to vibration.

UNIFORM



KESTER ACID-CORE SOLDER

UNIFORM in Alloy-Structure
UNIFORM in Flux-Content

Right down the line, pound after pound, spool after spool,
Kester Acid-Core Solder alone gives you these features
of uniformity, so necessary in doing the job right . . . and profitably!

Better than 50 years of usage proves Kester's reliability.
That's *practical experience* . . . and you know
the value of practical experience!

The "lower-priced and just-as-good solder"
is not for you . . . insist upon Kester
from your Jobber.

KESTER SOLDER COMPANY
4205 Wrightwood Ave., Chicago 39
Newark 5, New Jersey • Brantford, Canada

**KESTER
SOLDER**

New Products

Continued from Page 128

sockets when switching from inner to outer wheels on dual jobs.

Special sockets for driving 13/16-in. square nuts on the Budd wheel are also being made by Apex in standard and extra long types. Both the combination and the special square sockets are available for 5/8, 3/4, and 1 in. square drive for use with hand or power tools.

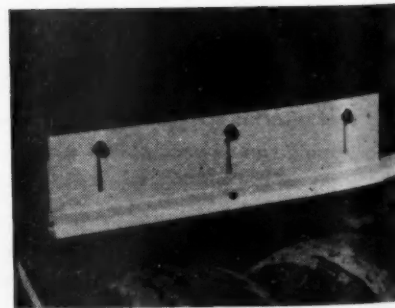
P237. Extinguisher

A plastic cased, automatic, carbon tetrachloride extinguisher is available from Red Comet, Inc., Littleton, Colo. The manufacturer states that when fire breaks out, heat releases a fusible clip which frees a coiled spring built into the lower section of the extinguisher. A plunger shatters the glass cartridge inside the case, releasing the fluid, which vaporizes at 168 deg, smothering the flames.



P238. Cab Mud Guard

To protect tractor cabs, air, or cable connections from road spatter, Whitehill-Eaves Inc., Cleveland, Ohio, has a mudguard which mounts saddle-style on the tractor frame ahead of the rear



tires. As shown, the guard is mounted by means of a 1 1/2-in. steel tubing assembly, 7 ft 11 in. long. The guard is of 1/4 in. rubber, 27 in. wide and about 6 in. high, mounted between steel plates bolted to the mounting tube.

P239. Wrenching Nut

An external wrenching nut made by Standard Pressed Steel Co., Jenkintown, Pa., can be applied wherever space is at a premium and high tensile strength is a must.

This Flexloc nut combines extreme strength with minimum size and weight. The tensiles are consistently in
(TURN TO PAGE 132, PLEASE)

age 128
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13/16-in.
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ay, 1952



CAPT. EASY Says

WEATHERHEAD
IS THE EASY LINE
TO HANDLE...
BECAUSE IT'S A
COMPLETE LINE

OVER 1500 ORIGINAL EQUIPMENT AUTOMOTIVE PARTS

...to make your replacement jobs EASY

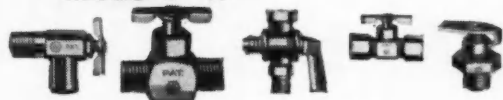
TUBE FITTING JOBS ARE EASY
with 405 different sizes and types of fittings



FUEL LINE REPLACEMENTS ARE EASY
with 64 different sizes and types of assemblies



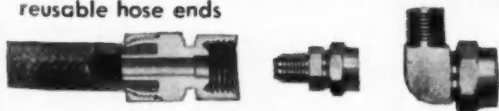
DRAIN AND SHUTOFF COCK REPLACEMENTS ARE EASY
with 91 different sizes and types



OIL-FILTER LINE REPLACEMENTS ARE EASY
with 30 different sizes and types of assemblies



HOSE LINE REPLACEMENTS ARE EASY
with 85 different sizes and types of hose and reusable hose ends



BRAKE JOBS ARE EASY
with 107 different sizes and types of brake fittings and hose



The EASY line to handle is...



Find out how Weatherhead can simplify your replacement parts problems. Ask for our condensed general catalog J-103. Address: THE WEATHERHEAD COMPANY, Dept. T, 300 East 131st Street, Cleveland 8, Ohio. In Canada: THE WEATHERHEAD COMPANY OF CANADA, LTD., St. Thomas, Ontario.



The Mark of Quality

WEATHERHEAD

ON EVERY CAR!

New Products

Continued from Page 130

excess of 160,000 lb per sq in. Designed with a large bearing surface, it has 12-point serrations to fit standard box or socket wrenches for convenience in restricted space and close clearances.

P240. Lining Stripper

For fast removal of bonded brake shoe lining, this de-bonder will han-

dle shoes from 8 in. to 16 in. in diameter, any width. It operates on local gas supply with an outlet for standard stove pipe to carry away smoke. The shoe rack moves forward for easy loading. The operation is similar to a common kitchen gas broiler. Barrett Equipment Co., St. Louis, Mo.

P241. Needle U Joints

Announcement of a new line of wide angle needle-bearing universal joints for use with power take-offs is made by

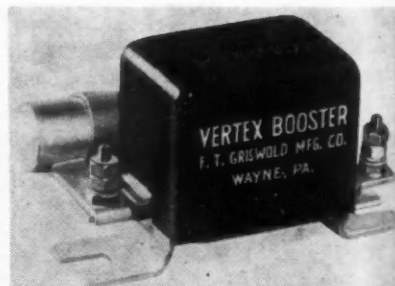
the Spicer Mfg. Div., Dana Corp., Toledo, Ohio. These new 1000 Series Spicer Universal Joints are designed to meet any conditions arising in the installation of any power take-offs, winches, pumps, etc. The line includes a complete unwelded assembly set with end yokes; single joint end yoke type; slip joint type; single joint and tube for use with midship bearing and accessories.

A major feature in the 1000 Series Spicer Universal Joint line is the blow-out-proof seal between the journal and each bearing. The cork washer of this seal is surrounded by the metal cork retainer, protecting the seal from road dirt. It also encases the seal so that when a pressure lubricating gun is applied the cork seals are retained in place and protected against blowout and loss of lubricant.

Other important features include compactness, lubrication fitting, rugged construction, high capacity in both intermittent and continuous service, and popular price.

P242. Starter Booster

A self-contained vibrator type electrical unit to overcome difficult starting conditions has been introduced. It is said to provide a hot spark at the plugs even at zero rpm and is used primarily on magneto fired equipment



that is of too high compression for the cranking motor and battery to carry the load. Sold under the trade mark, "Vertex"; distributed by Griswold Mfg. Co., Wayne, Pa.

P243. Hand Truck

A new hand truck with removable stair climbers has been announced by Magline, Inc., Pinconning, Mich. It is made of magnesium, weighs 16 lb, has a load capacity of 450 lb, and is designed with mechanically joined sections which may be replaced as needed.

(TURN TO PAGE 134, PLEASE)

COMMERCIAL CAR JOURNAL, May, 1952

Now! Complete Line of **Snugl**®

WHEEL BALANCING WEIGHTS for TRUCKS and BUSES

GET IT FROM YOUR JOBBER

T.V. HEAVY DUTY THIN

R & S REGULAR TRUCK Fits about 80% of all Truck Rims

"STANDARD OF THE TRADE"

Snugl Heavy Duty Truck Weights are especially designed to give

- EASIER APPLICATION
- BETTER FIT
- BETTER BALANCE

The exclusive Dove Tailed Steel Spring Clip holds weight firmly to rim with a Bull Dog grip . . . the beveled edges prevent clip from gouging tire.

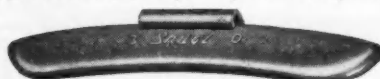
When you buy Snugl you can be sure of getting the finest Wheel Balancing Weights on the market . . . designed right and made right to give better balance and better fit. The name Snugl (Registered Trade Mark) on every weight is your guarantee of complete satisfaction.

FOR PASSENGER CARS

Write for Illustrated catalog sheets of Snugl Wheel Balancing Weights for Passenger Cars, Trucks and Buses . . . also name of your nearest Jobber.



Special Thin K & L Flange Weight for Passenger Cars



Regular K & L Weight for Passenger Cars

ID-

WESTERN AUTO PARTS

MANUFACTURERS EXCLUSIVELY

WEST COAST FACTORY WHITTIER, CALIFORNIA

MAKE YOUR STEEL DOLLARS

STRETCH

if you build or own
equipment like this



*Here's what
J&L
Otiscoloy,
the
Transportation
Steel,
can provide*

INCREASED PAYLOAD — Otiscoloy's high tensile strength permits the use of lighter sections without loss of strength — cuts equipment deadweight which allows for greater profit-paying cargo.

LOWER COSTS — Lighter sections with equivalent strength frequently make possible the production of 1/3 more units per ton compared with mild steel — result in 1/3 lower freight cost per unit — 1/3 less weight handled during production.

CORROSION RESISTANCE — Otiscoloy has 4 to 6 times greater resistance to atmospheric corrosion than mild steel — helps lengthen equipment service life — cut maintenance costs.

FATIGUE RESISTANCE — Otiscoloy has high resistance to fatigue — considerably greater than that of mild steel.

WORKABILITY — Otiscoloy can be easily welded or cold formed by any standard method.

J&L STEEL

It's no surprise builders and users of transportation equipment are turning to high-tensile J&L Otiscoloy to give them machines that require minimum maintenance — help increase income through reduced deadweight and greater payloads.

When you're looking for new ways to cut costs on your equipment, you'll also find it well worth your while to check further into the advantages of J&L Otiscoloy, the modern transportation steel. Why not write us for additional information *today*?

JONES & LAUGHLIN STEEL CORPORATION
PITTSBURGH 30, PA.

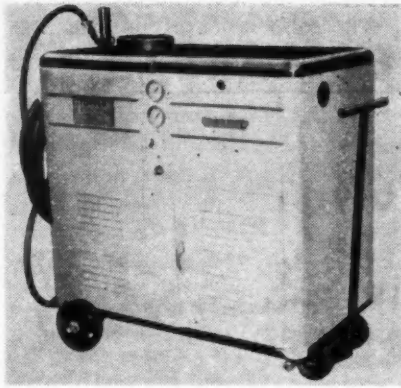


New Products

Continued from Page 132

P244. Steam Cleaner

A heavy-duty automatic steam cleaning machine has been announced. A single switch ignites the burner, while other automatic controls maintain the operation. The safety devices include a mechanical outside safety valve which provides a check on the electrical limit switch and by-pass

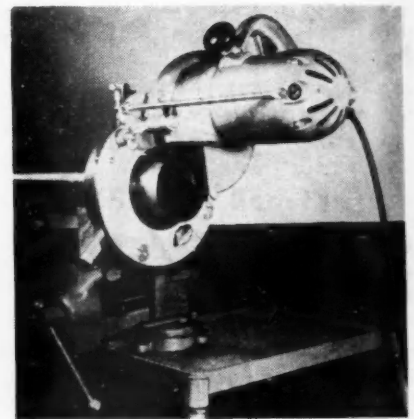


valve. The heating coils are protected by a water-level control, and the electrical system by an overload switch.

The mixing of the cleaning compound and its injection into the steam jet is also automatic, and the compound does not pass through the heating coils. The unit operates on kerosene, fuel oil and light diesel oil. The cleaner is available in stationary or portable models of 120-gal. capacity. Topper Equipment Co., Matawan, N. J.

P245. Metal Saw

An abrasive cut-off saw for metal pipes and tubing is designed with a rotating frame that is attached to the work. The saw and frame rotate around the work together. To operate,



the mechanic merely sets the saw for the desired cut and rotates the unit by hand. It operates on standard 110 v current, may be secured to any bench or bench vise and adjusted to any size tube or pipe. Tri-Clover Machine Co., Kenosha, Wis.

P246. Space Heater

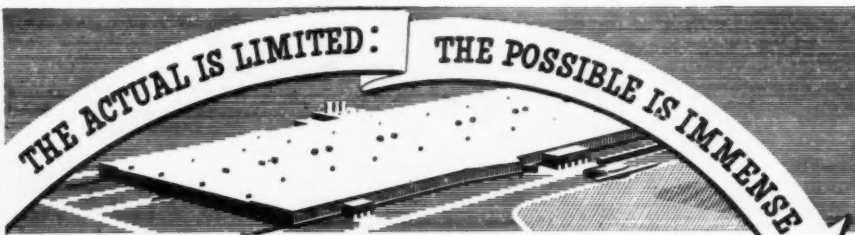
A portable furnace which, furnishes heat in winter, and circulates cool air in summer, is announced by Fageol Heat Machine Co., Detroit.

Known as Dual Purpose model 189, the unit delivers 189,000 btu of heat per hour. This is 49,000 btu more than the capacity of previous Fageol models. Also, the unit is so designed as to be converted to a cool air blower in summer, by changing the top blower mounting.

END

Please Resume Reading Page 78

COMMERCIAL CAR JOURNAL, May, 1952



NEW LINCOLN PLANT CREATED BY INCENTIVE-INSPIRED CO-ACTION IN DEVELOPING POSSIBILITIES IN PRODUCT

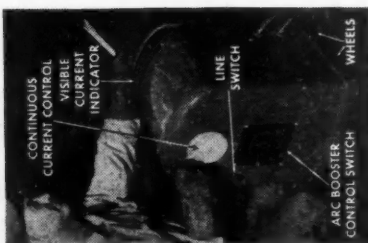
© LE Co. 1952

"FLEETWELDER'S" FAST SIMPLE WELDING CUTS YOUR COSTS

How simple can welding get? "Fleetwelder" shows how. With the "Arc-Booster", the arc starts itself the instant the electrode touches the work. No more electrode sticking as on conventional welders. And with "Fleetwelder's" stable arc, it's easier to produce strong, dependable welds in all positions—flat, vertical or overhead.

Handles a Wide Range of Work—Instant current selection with dial tuning from 20 to 220 amps assures quality, low cost welding with $\frac{3}{4}$ " to $\frac{1}{4}$ " electrodes on all types of repairs, light body work to heavy frames and axles.

And Low In Price—Here's a rugged welder of Lincoln famous industrial construction. Conforms to NEMA standards... yet sells for less than other welders of like capacity.



CONTINUOUS CURRENT CONTROL

VISIBLE CURRENT INDICATOR

LINE SWITCH

WHEELS

ARC BOOSTER CONTROL SWITCH

SPEEDS REPAIRS



Fig. 1—Repairs Shackle in a few hours. Trailer frame was bent and rivets sheared by accident. After straightening frame, the shackle was bolted and welded all around to the frame with Lincoln "Fleetwelder" *7 electrode. Solid, one-piece construction is now stronger than the original.

SIMPLIFIES ALTERATIONS



Fig. 2—Lengthens Truck Frame by arc welding 6" channels to the old frame section. Corners are reinforced with triangular plates for added rigidity.

*Fleetwelder Electrodes... world standard for quality welding.

HERE'S EASIER LOWER COST WELDING

Send for free Bulletin 1301 on "Fleetwelder" 200 AC, write Dept. 323

THE LINCOLN ELECTRIC COMPANY

CLEVELAND 17, OHIO

The World's Largest Manufacturer of Arc Welding Equipment

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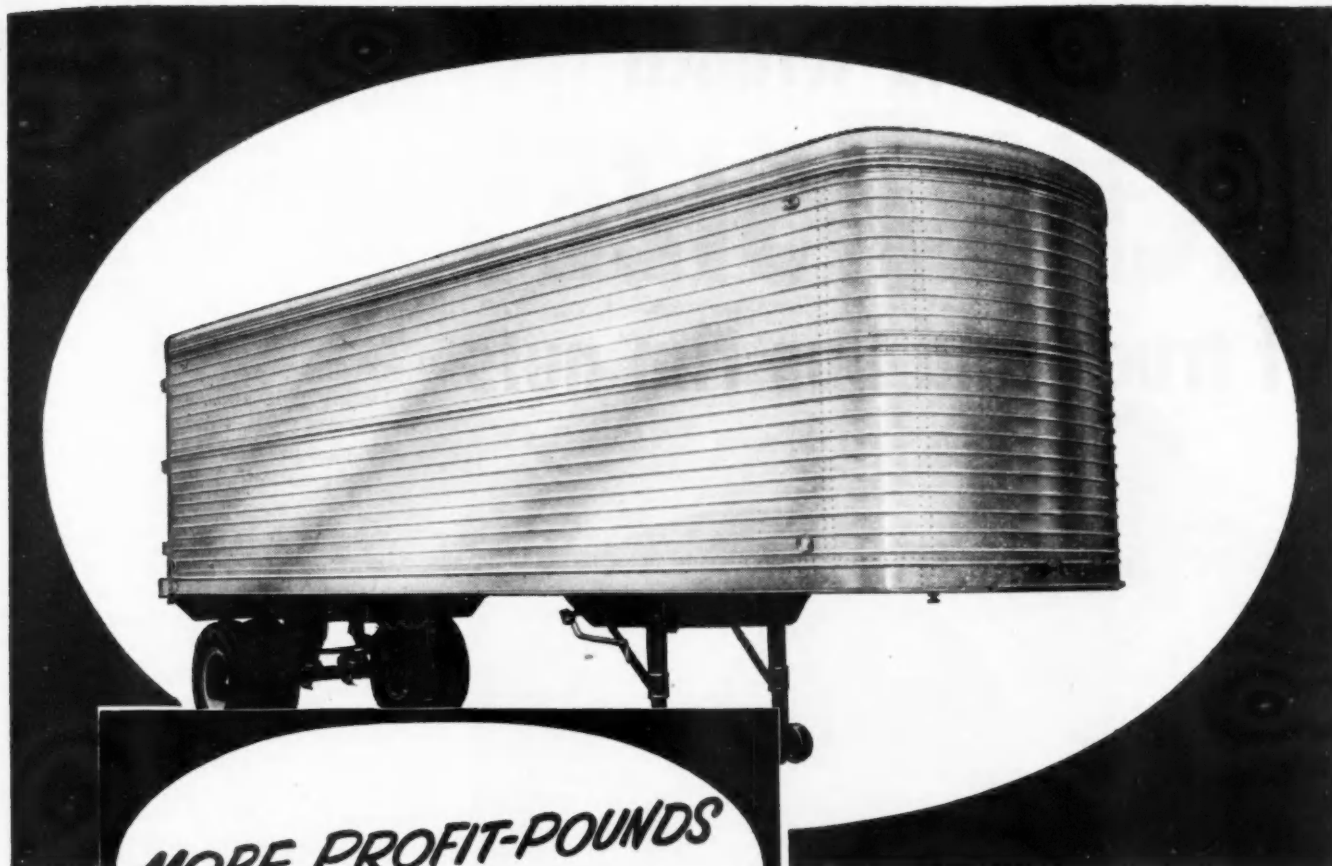
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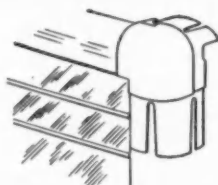
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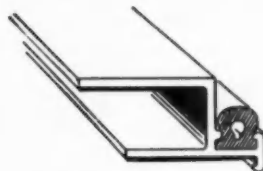


**MORE PROFIT-POUNDS
PER TRIP!**

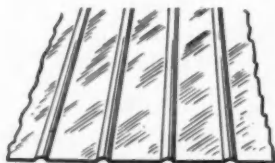
... WITH TRAILERS OF LIFETIME ALUMINUM



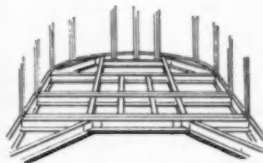
REAR CORNER CASTING, with exclusive fingers feature, ties in to longitudinal radius section, rear header section and rear vertical corner post.



DOOR EXTRUSION has retaining lip designed to protect outside skin and operator. Uses T-slotted replaceable Koroseal gasket.



SPECIAL CLAD aluminum alloy skins are corrugated to provide extra rigidity and strength.



ALL-ALUMINUM pre-cut structural members form the extra strong, rigid 5th wheel spider.

This sturdy aluminum trailer, produced by the companies listed below, reduces deadload from 1500 to 3000 pounds per unit. Although this trailer is in the "lightweight" class, it has the proved strength and durability of a "heavyweight". Tough Reynolds Aluminum alloys enable it to take road wear and tear . . . and without the maintenance expense of painting.

Built with standard parts, this rugged all-aluminum trailer is soundly engineered and quality controlled. Available in standard sizes for your particular requirements. Service parts available from this network of trailer producers. For additional information contact one of the manufacturers listed below. Manufacturing distributorships still available in some areas.

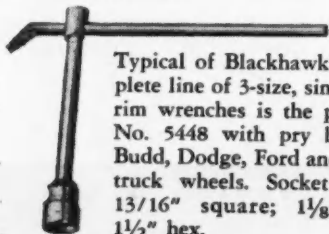
MANUFACTURING DISTRIBUTORS

This one wrench LICKS 7 SIZES of truck and bus rim nuts

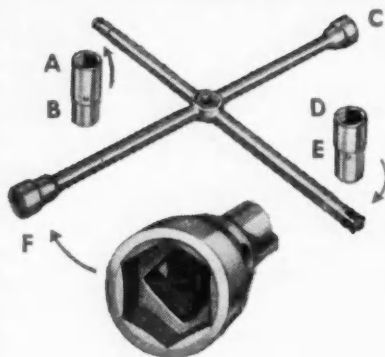


The most practical rim wrench made today!

Yes, with just one wrench — Blackhawk's new No. 15970 — you can service *all current models of trucks and buses!* Accurately broached sockets prevent nut rounding. And the heat-treated alloy-steel makes it a brute for punishment despite its light weight. Order No. 15970 or any one of the complete line of Blackhawk rim wrenches from your jobber.



Typical of Blackhawk's complete line of 3-size, single-bar rim wrenches is the popular No. 5448 with pry bar for Budd, Dodge, Ford and other truck wheels. Socket sizes: 13/16" square; 1 1/8" and 1 1/2" hex.



7 Sizes — Count 'em:

A and B, reversible Lock-On socket, 7/8 and 1-1/16" hex; C, 1 1/2" hex; D and E, reversible Lock-On socket, 15/16 and 1-3/16" hex; F, 1 1/4" hex with 13/16" square opening in back of broach. Any 3/4" square drive socket can be used on the two square shank ends.

BLACKHAWK®

A product of BLACKHAWK MFG. CO., Dept. W-1152, Milwaukee 1, Wisconsin

Experts Honored

Continued from Page 71

marked that the need for future studies of this type was clearly established. As a matter of fact, reprints of this original survey are still in circulation and still used as a guide by many fleets. Later the same year, there appeared two surveys on road failures and six on questions involving lubricating practices.

During 1948 and early '49 the Board of Experts studied problems of replacement part practices, washing, painting, rust prevention, lettering, and decorating.

Then in June, 1949, appeared the first of the important series of establishing the life of various vehicle parts. This series ran through January, 1951.

During the remainder of '51, the major activity concerned tire practices.

Now in this issue appears the first of a new series on fuel mileages and purchasing practices.

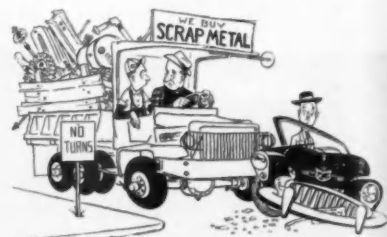
All of the subjects studied have been suggested by the Board Members themselves in cooperation with CCJ editors. At the moment plans are underway for still further future studies and suggestions from all readers are welcome on what studies might be of maximum value.

Throughout the entire series special emphasis has been placed on the need, established at the very beginning, for complete vocational breakdown of the various activities. A major step during 1951 was the segregation of bus operations so that these could be compared on an entirely separate basis from the truck fleets.

Through its Board of Experts, CCJ is most happy to extend its service to the industry in this manner. To the particular group who are singled out for recognition in the accompanying list our hearty congratulations. It is hoped that still more will be among the members so honored next year.

END

Please Resume Reading Page 72



"Business, business, business—I can never get away from business."

Performance that stands out!

● No other manufacturer can duplicate Ditzler's record of consistently *dependable performance* in the field of automotive finishes. That's why Ditzler finishes have been used year after year for nearly half a century by most of the builders of passenger cars, trucks and buses. This continuous preference has

lifted Ditzler to its present position as the foremost *exclusive* manufacturer of automotive finishes. Because Ditzler finishes are rated as best by those who build automotive vehicles, it is reasonable to conclude they should also be the most efficient, most economical and most satisfactory for refinishing needs.



Save time, effort and cost with DITZLER TWO-STAR★★ Materials!

● You can't buy better lacquers for automotive refinishing. Thinned with Ditzler Two-Star★★ Thinner, DTL-113, Ditzler Two-Star★★ Lacquers flow on so smoothly that little compounding is required. Two-Star★★ Polishing Cleaner, DRX-4, gives a brilliant lustre. Use Two-Star★★ Polishing Compound, DRX-25, if color is sprayed a little dry, or over-spray is rough. Two-Star★★ Gloss Undercoat, DL-900, eliminates sand scratches in old lacquers. You'll find these materials ideal for small touch-up spots on baked enamel jobs. They are also deluxe materials for all-over jobs in lacquer.

DITZLER COLOR DIVISION, Pittsburgh Plate Glass Company, Detroit 4, Michigan



More Miles for Your Battery Dollar

Continued from Page 69

How long do we expect this unit to fulfill the requirements expressed in Items 1, 2 and 3? How long can mean; how long in months, or; how long in miles; or, preferably, a combined unit of both. The tonnage phase of the equation does not enter in very actively except in that it may indicate to some degree the number of lights which are over the larger carriers.

Starting Design

MAXIMUM starting effort, of course, is produced by the battery with the lowest internal resistance, which in turn means a maximum number of thin plates to provide as much plate area as is practicable. There are both practical and economic limitations on the adaptation of this theory. Practical lim-

itation No. 1 being that the thinner plates become, the more difficult they are to handle in processing, and the more damage loss there will be in manufacture. The economic limitation being that the more pieces it is necessary to handle for a given item, the more labor cost is involved. Generally speaking, however, we will say that the amount of plate area required to do a given starting job is influenced by these factors.

First, engine size. Quite obviously an engine with a large displacement will require greater cranking effort than one with a small one, and consequently requires more plate area to do the starting job. Second, operating temperature range. This is a very important factor in that as temperature is decreased the starting effort required is greatly increased, and at the same time the available power in the battery is decreased. Thus, a battery that is going to be called upon to start cars in ambient temperatures of -20 deg. F. or thereabouts must obviously have a great deal more plate area than one which is to start a car or truck in moderate climates or one which is garaged during its inoperative periods.

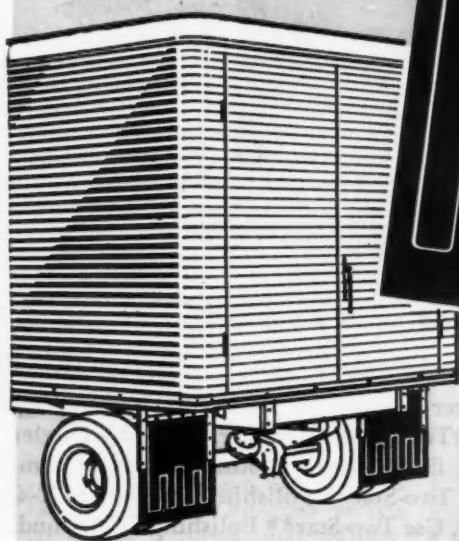
Another important consideration is that of the average state of charge of the battery during its usual operation. This is dependent upon a number of factors; the relation of the generator output and its control to the average load imposed. Obviously, a small battery operated in a fully charged condition can do as good a job as a larger battery operating at a half-charged condition, but there are drawbacks to this situation, which will become evident later. It is largely a matter of accuracy of controls and accuracy of servicing records. Then there is the situation of emergencies, which seem to arise frequently in a battery's life. We need reserve capacity.

Now to illustrate the point that battery design is dependent upon the nature of the job to be accomplished, let's take a look at Fig. 3, which in line drawing will show two elements which go into exactly the same size compartment in the battery container. Group II in SAE language. These two elements will produce highly varying results in cranking performance and practically identical results in lighting performance, that is, low rate performance, but which will also have quite different life characteristics. On the left we illustrate graphically an end elevation of an Ordnance 2H23 element, which employs 11 positives and 12 nega-

(TURN TO PAGE 142, PLEASE)

HEAVY DUTY RUBBER ARMOR-FLEX

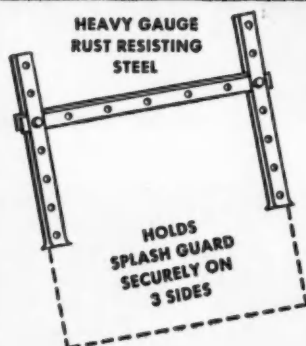
Splash Guards



FOR TRUCKS AND TRAILERS

SPLASH GUARD UNIVERSAL MOUNTING BRACKET

Designed to meet the most rigid road conditions. Built to withstand the abrasive action of mud, sand, stone and ice. Made of heavy-gauge molded rubber combined with woven fabric. A brass-plated steel bar imbedded into mounting-edge provides tear-proof grip for holding bolts. The Standard-Deluxe type is available in six sizes: 20" x 20", 20" x 24", 24" x 24", 24" x 30", 24" x 36" and 24" x 40". Pre-punched for easy mounting. Packed two per box.



Complete unit—specially designed to mount splash guards. Adaptable to fit any model truck or trailer. Packed one pair per box

Doan

MANUFACTURING CORP.
1761 LONDON ROAD • CLEVELAND 12, OHIO

The records prove it over and over again!

"Kellys cost us less per tire-mile!" . . .
 "Kellys help lower our accident ratio!" . . .
 "Kellys cut our truck 'down time'!" Typical statements from men just like yourselves! And our files are filled with them!

Here is best possible evidence that famous Kelly "know-how" produces the tires that can give you top results, on any kind of road, on any kind of job, in any kind of weather.

Here too, is a first-rate reason for trying Kellys on your trucks *now*. You'll discover that Kellys' amazingly tough tread and rugged carcass give you greater safety, better recaps, more trouble-free miles for the money than you ever thought possible!

THE KELLY-SPRINGFIELD TIRE COMPANY
 Cumberland, Maryland

*There's a tough Kelly
 for every trucking job*



**JOB-DESIGNED TO GIVE YOU
 THOUSANDS OF EXTRA MILES**

Truc Trac
 Delivery

Truc Trac
 Highway

Commercial
 Heavy Tread

Dual Trac
 Special Service

Lug Trac
 Special Service



HERE'S MORE PROOF THAT KELLYS DELIVER !



"IN THE LAST THREE YEARS I have driven about 150,000 miles over some very rough terrain in weather that varies from 100° above to 20° below zero. I have tried various brands of tires but I have found that Kellys give me better performance and better mileage. Tire breakage was formerly my biggest problem but since I started using Kellys I haven't had a broken tire. One of my Kelly tires has gone 40,000 miles and I am still using it. On a set of mud and snow grips I got 27,000 miles without a break over rough country roads."

Earl Dudley

State Conservation Officer, Elko, Nevada.



"THE BUS SHOWN in the picture is one of our fleet, which is mostly equipped with Kelly-Springfield Truc Tracs. Our drivers not only claim that ease of steering is tops with these tires, our records show the most outstanding performance of any tires we have used."

Leonard McKee

Owner, Yacolt Stage Co., Vancouver, Washington.

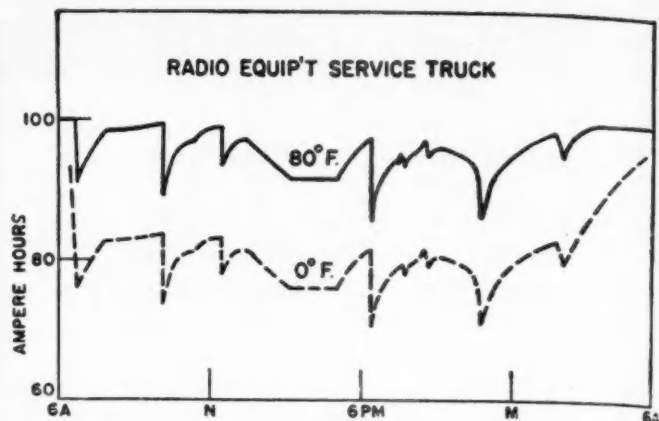
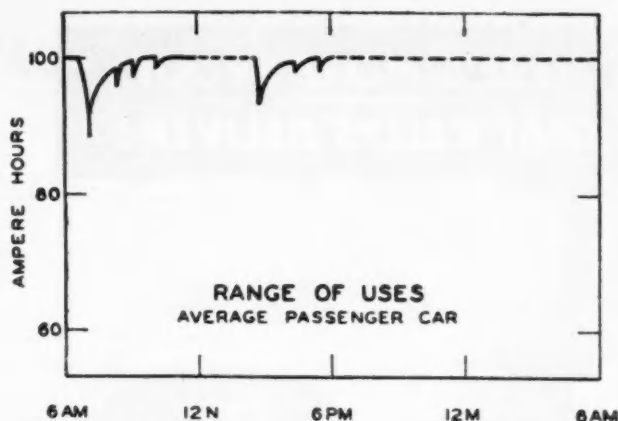
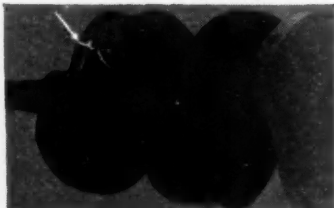


Fig. 4. Left. Ampere hour loss in average car during day. Fig. 5. Right. Cycling effect of battery used in radio-equipped truck

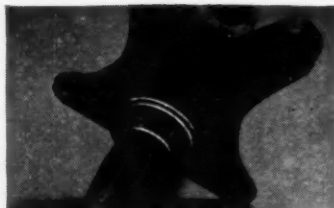
S-T-R-E-T-C-H

THOSE MILES
...you may need them!
Let
MAGNAFLUX-MAGNAGLO*
INSPECTION
"spot" potential failures
during overhaul

Fleet operators know that the trucks they own or can buy today may have to work harder and last longer than any in many years. More and more operators are therefore insisting upon Magnaflux-Magnaglo inspection during maintenance or overhaul. Detecting otherwise invisible defects in a part before it fails can prevent destruction of other parts or even the loss of entire units. Finding cracks while they are still small often allows for safe salvage of parts that are increasingly hard to get. Magnaflux-Magnaglo inspection is so reliable, fast and easy that it is routine in more shops every day!



Fluorescent Magnaglo indication, as discovered on crank throw at overhaul. Glowing line marks non-visible crack very near to final failure.



Magnaglo inspection of this steering spindle when front wheels were packed gives clear indication of otherwise invisible serious cracks that could cause failure.

FOR SAFETY . . . ECONOMY . . . LONGER LIFE
Write for complete information on how Magnaflux can keep your equipment running longer — safer.



*Magnaflux-Magnaglo® Trade Marks of Magnaflux Corporation applied to its equipment and materials for magnetic particle inspection.

MAGNAFLUX CORPORATION
5908 Northwest Highway, Chicago 31, Illinois
New York 18 • Cleveland 15 • Detroit 11 • Dallas 9 • Los Angeles 58
Export Distributor: Curtis Wright Corp. In Canada: Williams & Wilson, Ltd.

More Battery Miles

Continued from Page 138

tives, or a total of 23 plates. On the right is illustrated a 13-plate element which fits in exactly the same space but which employs much thicker plates and thicker separators. Let's see what these designs represent in terms of cranking performance at the standardized 300 amperes at 0 deg. F. SAE test.

Fig. 1 is intended to illustrate the effect on life and performance during life of the use of lower specific gravities. There are quite widespread experiments now in the field, in the hands of different manufacturers, which tend to verify these data. It is true we suffer some in initial performance in cranking, but as life proceeds the battery with the lower gravity may actually improve its cranking performance, whereas the one with the high gravity deteriorates rapidly. Battery manufacturers have been somewhat loath to use lower gravities because of the seeming loss of rated capacity, but the field advantages from the life viewpoint, together with improved materials and manufacturing techniques which tend to offset the capacity losses, appear to be gradually swaying them toward lowered normal operating gravities. A numerical difference between a 1.25 gravity and a 1.30 gravity does not sound like very much. The intent of this graph is to impress you with its very real significance in battery life. This can be carried too far, of course.

In Fig. 2 we compare cranking performance at various operating gravities. Obviously, we cannot take a lick-
(TURN TO PAGE 144, PLEASE)



it's powerful.....
it's fast....easy....safe.....
.....it's a

Hein-Werner!



Listen to the truck driver who speaks from experience. He will tell you that a Hein-Werner Hydraulic Jack is his choice because it's *powerful* . . . it's fast . . . easy . . . safe.

Every Hein-Werner Hydraulic Jack is factory tested at $1\frac{1}{2}$ times rated capacity—that's *power* for you . . . One hand operation raises loads of 30 tons or heavier in seconds—that's easy operation with speed . . . and jack can not lower accidentally, as handle must be removed from pump to release valve—that's **SAFETY**.

This great line of jacks is made in models of 3, 5, 8, 12, 20, 30, 50 and 100-tons capacity. Complete H-W line also includes "Bumper-Lift" Jacks for passenger cars, "Swift-Lift" and Service Jacks for shop use, and "Push and Pull" Hydraulic Jacks for body, fender and frame work.

Hein-Werner



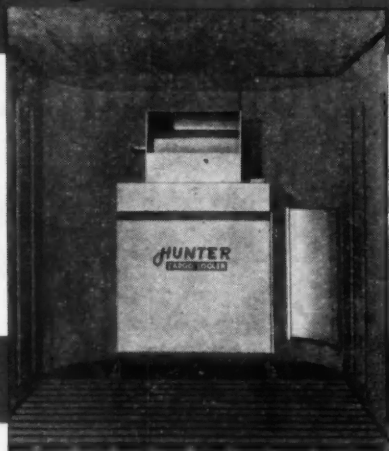
HEIN-WERNER CORPORATION • WAUKESHA, WIS.

"EFFECTIVE • DEPENDABLE • ECONOMICAL



with *Minimum Maintenance*"

**That's why Spector
has standardized
on Hunter Cargo
Coolers for its
refrigerated fleet**



"The Hunter Cargo Cooler has drastically reduced our maintenance expense and has given us completely dependable and effective refrigeration," says William Reib, manager of the Perishables Division of Spector Motor Service, Inc., Chicago, Ill. "It has *entirely eliminated* the need for specialized refrigeration maintenance personnel, an expense we found so excessive that it made profitable operation almost impossible."

Spector ought to know. Spector hauls over 50 million pounds of meat annually between the Midwest and the East Coast, as well as a large volume of pharmaceuticals and merchandise requiring heat protection. Spector is currently using 35 Hunter Cargo Coolers with Heaters (Combination Units) and 15 more are scheduled for installation by June 1.

The Hunter Cargo Cooler requires practically no maintenance because its only moving parts are two blower fans. It utilizes the infallible refrigerating ability of dry ice to fullest advantage through a forced air circulation system, thermostatically controlled and automatically operated to provide safe, dependable, accurate refrigeration uniformly throughout the cargo. It will hold any temperature required between 0° and 60° and makes total road failure of refrigeration an *impossibility!*



Send for Booklet fully describing the Cargo Cooler and its proved performance with all types of cargos.

Complete information also available on the Hunter Cargo Heater, Combination Units and Cab Heater.

These Features Tell Why So Many Fleets are Swinging Over to Cargo Coolers

- **MAXIMUM RELIABILITY** — eliminating numerous damage claims.
- **MINIMUM MAINTENANCE** — greatly reduces upkeep and repair expense.
- **BIGGER PAYLOADS** — the Cargo Cooler weighs only 300 lbs.
- **QUICK TURN-AROUNDS** — no long tie-ups for servicing.
- **HIGH CAPACITY** — holds 600 lbs. dry ice, can be re-iced in transit through access door on trailer.
- **REFRIGERATING ABILITY** — zero to 60°, thermostatically controlled.
- **COMPACT** — only 19" deep, 48" wide, 75" high.
- **LOW COST** — low first cost, low operating and maintenance cost.

HUNTER MANUFACTURING CO., 1550 E. 17th St., Cleveland 14, Ohio

Send me complete information on the Hunter units checked.

☐ CARGO COOLER ☐ CARGO HEATER ☐ COMBINATION UNIT ☐ CAB HEATER

NAME _____

ADDRESS _____

CITY _____ STATE _____

More Battery Miles

Continued from Page 142

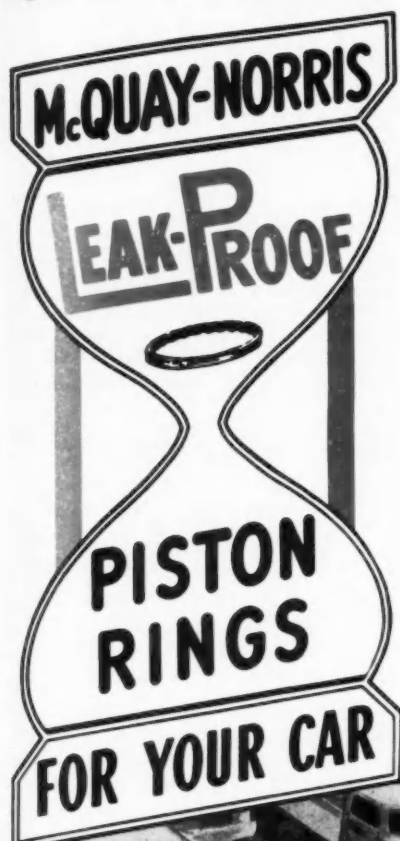
ing of 50 per cent in cranking performance, therefore, we cannot go as low as 1.200 to 1.220 in starting gravity. The optimum performance appears to be around 1.280, particularly where low temperature is considered. Gravities much above this value result in impaired low temperature performance.

Fig. 4 is an attempt at a graphic representation of a day in the life of a passenger car battery. We will take a 100-ampere hr battery, operating in a salesman's car. Perhaps it is a little optimistic, but we will say that the salesman starts out on his trip at seven o'clock in the morning. We see an appreciable loss of ampere hour capacity during his initial start. Probably it was a cold morning. But this is rather rapidly regained from his high rate generator with its voltage regulator control. We see that he made three stops during the morning and since the engine was warmed up and he did not spend too much time with the customer, there wasn't very great ampere hour loss in those restarts; and at noon he takes quite a spell for lunch so that the motor will have cooled off appreciably and again takes quite an amount to start it, and we see a similar performance repeated during the afternoon. Then the battery has nothing else to do until seven o'clock the next morning. This all, of course, presumes proper setting of his voltage regulator so that the battery has not been seriously overcharged during this inoperation. At no time have we had more than 10 per cent of the ampere hour capacity of the battery taken from it. With the average use of a passenger car for to-and-from-work driving, even this small amount of working will not be approached. The above, of course, presumes a fully charged battery. With reference to the earlier graphs on the effect of partial charge, this should be kept in mind.

Fig. 5 is intended as a graphic representation of a day in the life of a battery which is operating in a radio transmitter equipped service truck, which is operating on a three-shift basis. The sharp downward points, of course, indicate various starts, and the gradually sloping downward trends indicate periods during which the transmitter equipment was in use, or during which period floodlights or other current-consuming equipment may have been required while the engine was

(TURN TO PAGE 146, PLEASE)

Cut Costs-Boost Mileage



WITH **LEAK-PROOF** REG. U. S. PAT. OFF. **PISTON RINGS**

LEAK-PROOF rings *boost mileage* because of

Altinizing—a tough, protective coating
against scuffing, wear and acid action . . .

included at **NO** extra cost to you!

And LEAK-PROOF rings *cut costs* because they do
a good job . . . lengthening the time
between re-ring and overhaul jobs.



McQUAY-NORRIS MANUFACTURING CO.
ST. LOUIS 10, MO.

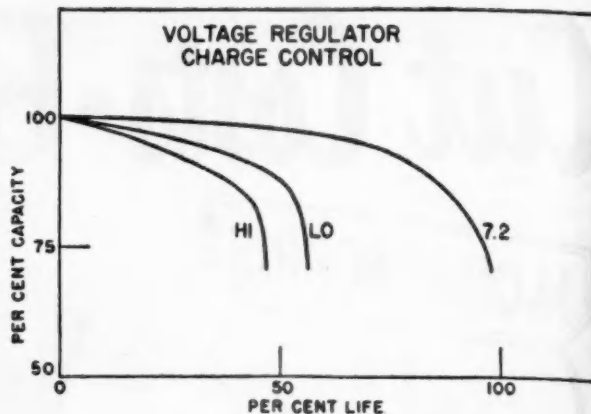
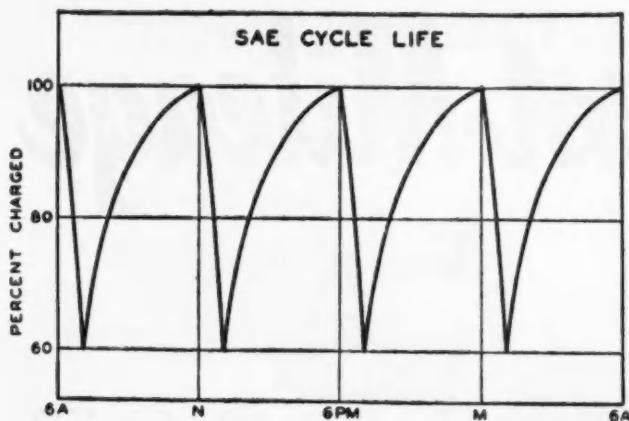


Fig. 6. Left. Four cycles of charge and discharge take place in battery during the day. Fig. 7. Right. Graph shows effect of operating in a state of high and low charge—in battery life

POSITIONING PROBLEM? An AEROL product will solve it!

Use—Compare—
and You'll Prove:
**YOU SAVE TIME
and MONEY with an
AEROL LIFT**



**REMOVES
POSITIONS
INSTALLS**

TRANSMISSIONS UNIVERSAL JOINTS
GAS TANKS DIFFERENTIALS
CRANKCASES SPRINGS
AXLES DRIVE LINES
ENGINES
TIRES

THE MOST VERSATILE LIFT IN THE INDUSTRY

Every shop, large or small, needs an AEROL LIFT—the lift that rolls under *any* vehicle and quickly positions *every* under-chassis unit.

An AEROL LIFT is inexpensive to buy, cost-free to maintain and profit-producing in use. You'll swear by it—not at it!

Available in heavy-duty and *extra* heavy-duty models—both designed for easy, one-man operation. AEROL LIFTS are made by The Cleveland Pneumatic Tool Co., and are sold only through jobbers. Distributed in Canada by Vic Mathewson Company, Ltd., Toronto 14, Ontario.

THE CLEVELAND PNEUMATIC TOOL CO.
Automotive Division

3769 E. 77th Street Cleveland 5, Ohio
Please send me a copy of the new AEROL catalog.

Name _____

Street _____

City _____ Zone _____ State _____



More Battery Miles

Continued from Page 144

not in operation; or current requirements over and above the generator capacity, which is not too unusual in circumstances of this sort. We also show the effect of similar operation at a lower temperature in which the peaks, of course, go much lower by reason of the increased starting requirements at low temperature and also by reason of the lower capacity available in the batteries at this temperature. Mentally comparing this with the previous chart of the salesman's car, you can readily see that the battery is doing several times the work of that in the first instance, and quite obviously a battery for this kind of operation is going to require a different style of construction than that for the former. More particularly, it is certainly going to be desirable to have a maximum of reserve capacity to take care of emergencies where loads may readily exceed generator capacity. Trucks of this sort are essentially emergency apparatus and, therefore, their equipment should be in the same category.

Fig. 6 illustrates the life of a battery during a day on SAE life schedule. Again we will assume a 100 ampere hour battery. During the first hour we discharge it at 40 amperes, thus we have taken out 40 ampere hours. During the succeeding 5 hours, we recharge it at 10 amperes, thus we have replaced the 40 ampere hours taken out, plus 10 ampere hours of overcharge. This degree of overcharge was arbitrarily selected by mutual agreement of battery engineers and automotive engineers as representative of a

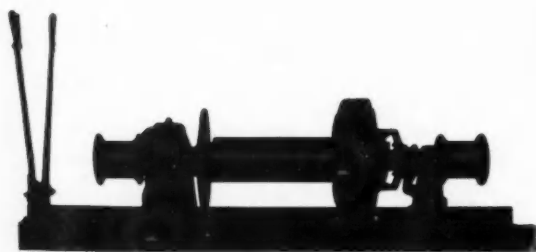
(TURN TO PAGE 148, PLEASE)

MAYBE YOU DON'T HAVE LOGS TO MOVE...



BUT
HERE'S HOW
BRADEN
SAVES

MANPOWER
FOR
LUMBERMEN



MODEL M5-18C FRICTION CLUTCH

Here's the winch for skidding jobs. If log or other load becomes caught the friction clutch keeps the sudden shock from tearing up the winch. The M5-18C is designed for handling loads up to 10,000 lbs.

See that powerful friction truck winch lifting that heavy log to a truck? Four or five men couldn't do the job as easily or quickly as this smooth-operating friction clutch winch.

The owners of this BRADEN-equipped truck use their winch for log skidding and lifting, as well as moving heavy logging equipment.

This model winch is perfect for any handling job that requires that the load be under perfect control at all times. Write for complete information, or see your nearest BRADEN Distributor.

BRADEN WINCH COMPANY

P. O. Box 547, Broken Arrow, Oklahoma

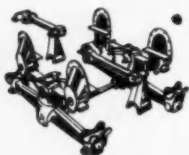


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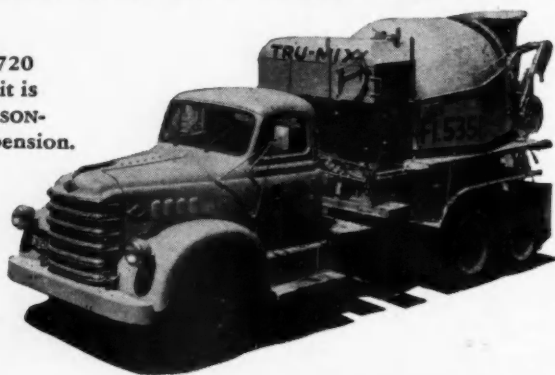


then Specify



Hendrickson Tandem

This Diamond T Model 720 six-wheeler ready-mix unit is equipped with HENDRICKSON-EATON Tandem axle suspension.

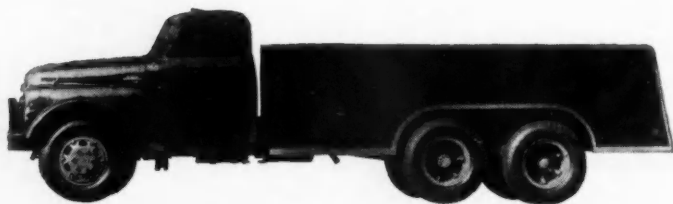


Many White Truck users specify HENDRICKSON Trailing Axle Units, incorporating the HENDRICKSON Tandem. Shown here: White Model WC-28.

International LF-190 Tractor with double-drive HENDRICKSON-EATON Tandem; Talbert Removable Gooseneck Trailer, HENDRICKSON Tandem axle suspension.



This G. M. C. Model H. C. 625 is equipped with HENDRICKSON Model T-326-1 Trailing Axle unit.



Tandem axle units provide the greatest legal increase in capacity at the lowest cost. HENDRICKSON'S one basic design is right for every tandem application.

HENDRICKSON MOTOR TRUCK COMPANY

8001 West 47th Street • Lyons (Chicago Suburb) Illinois

More Battery Miles

Continued from Page 146

normal operative condition. We see that we got four complete cycles during a day. Each of these cycles is far deeper than any of those experienced in the truck operation illustrated in the earlier slide. The net result is that we have a highly accelerated bench life test, which is reasonably indicative of the performance to be expected from this given design of battery, when subjected to cycling operation. It serves as an empirical basis of comparison for styles of construction, materials and processes employed in producing a given unit.

Fig. 7 is only intended to show tendencies and does not express any precise values. It is intended to demonstrate that proper setting of the voltage regulator will have very real influence on the life expectancy of a given installation. If the regulator is too high, obviously the battery is going to be seriously overcharged, and field experience, especially with passenger cars, indicates that the majority of batteries in the field today are subject to overcharge conditions.

Constant overcharge rapidly deteriorates the cranking capacity of the battery during this type of life test, and similarly during this type of operation in service. There are things that can be done about this, and they are being done. Grid alloys are being improved to the extent that the ability of batteries to survive this test, and similarly to survive this type of operating condition in the field, have been greatly increased. This has been effected through the results of a great deal of research in grid alloys, in improving their resistance to corrosion, that is to say, electrolysis due to overcharge.

In making your battery analysis of whether your batteries are drying from cycling or overcharge, keep in mind that in the case of cycling life, the active material will have been softened and perhaps dropped from the grid; whereas in overcharge life, the active material will have been very much hardened and the grid will have become brittle and perhaps broken. Neither of these evidences become apparent until the half-life period has been reached, but an analysis of failed-in-service batteries will readily disclose the kind of life your batteries are leading.

END

Please Resume Reading Page 70

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Bendix Westinghouse

THE WORLD'S MOST TRIED AND TRUSTED AIR BRAKES

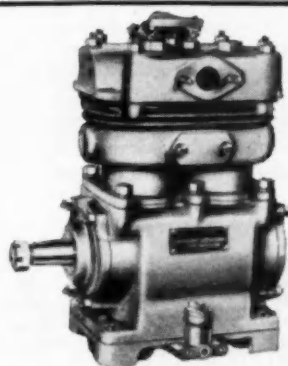
Perform Better-Longer!



BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY
ELYRIA, OHIO



Peak braking performance, outstanding economy and long life dependability are no gamble when you install Bendix-Westinghouse Air Brakes—they are a certainty. A fact proved by thousands of the nation's truck operators over billions of miles traveled on all kinds of hauling jobs. But such an outstanding record of superiority, unmatched by any other brake in the field, didn't just happen—it was planned that way. The Bendix-Westinghouse Compressor, for example, planned and designed on the same reciprocating piston principle as the engine in your truck, has demonstrated a remarkable ability for rugged, reliable service by often outlasting the life of the vehicle itself! Add the substantial savings on maintenance and parts replacement costs to this extra long life and you can see why these mighty brakes are first choice wherever trucks roll! Take advantage of it—when you specify Air Brakes, specify the best—Bendix-Westinghouse, the world's most tried and trusted air brakes!



The Bendix-Westinghouse Compressor—heart of the air brake system—performance proven over more miles on more installations than any other compressor available!

Foster-Built ^{Dry Ice} Bunkers



- Lowest Cost
- Dependable Refrigeration
- Efficient Operation
- Simple To Install

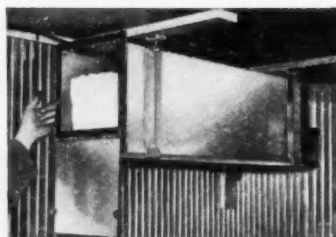
Cut Your Truck Refrigeration Costs



For over the road haulers and city delivery trucks Foster-Built Dry Ice Bunkers give dependable truck refrigeration at only a fraction of the cost of expensive mechanical refrigeration units.

Low Purchase Price • Lowest Operating Cost

Foster-Built Dry Ice Bunkers are the practical, lowest cost way to sure, effective truck refrigeration. Foster-Built puts the great temperature-reducing and food preserving qualities of dry ice to work efficiently. There's no complicated mechanism to break down—a low amp fan forces air along the chilled metal plate, circulating arctic air throughout the truck body—keeping the load at the desired temperature.



Low Installation Cost

Simple to install, Foster-Built Bunkers need only the placement of four studs and a quick wiring operation to be ready for service—and they can be removed in minutes when refrigeration is not needed.

Foster-Built
DRY ICE TRUCK BUNKERS

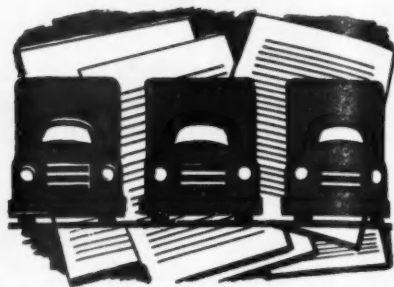
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☐ Case Histories of Foster-Built Dry-Ice Bunkers Booklet.
☐ Dry Ice Warehouse List

Name
Company
Address
City Zone State

CCJ

FLEET NOTES



United Van Lines, St. Louis, Mo., has made J. Wallace Fager, recently appointed general manager, a vice president of the corporation. Mr. Fager is well known in the trucking industry and an active member of various trucking organizations.

Maislin Bros., New York, has opened a new 20-door terminal at Grace & 8th Sts., Secaucus, N. J. The company will continue a receiving station at 456 Greenwich St., New York.

Super Service Motor Freight Co., Nashville, Tenn., has a new traffic representative, William Blount. He was formerly with Cook Truck Lines, and is the president of the Nashville Motor Freight Assn.

Branch Motor Express Co., New York, has filled the post of traffic representative for their Newark, N. J., operations. The new representative is J. Charles Cavanaugh. He was sales manager for Red Star Line of Auburn, N. Y.

Helm's New York-Pittsburgh Express has a new sales director in the person of Frank J. Ryan.

Mason & Dixon Line, has promoted A. D. Cogburn, former branch manager at Chattanooga, Tenn., and E. G. Thornton, formerly in charge of the branch at Nashville, Tenn., to positions of district managers, with headquarters at Kingsport, Tenn.

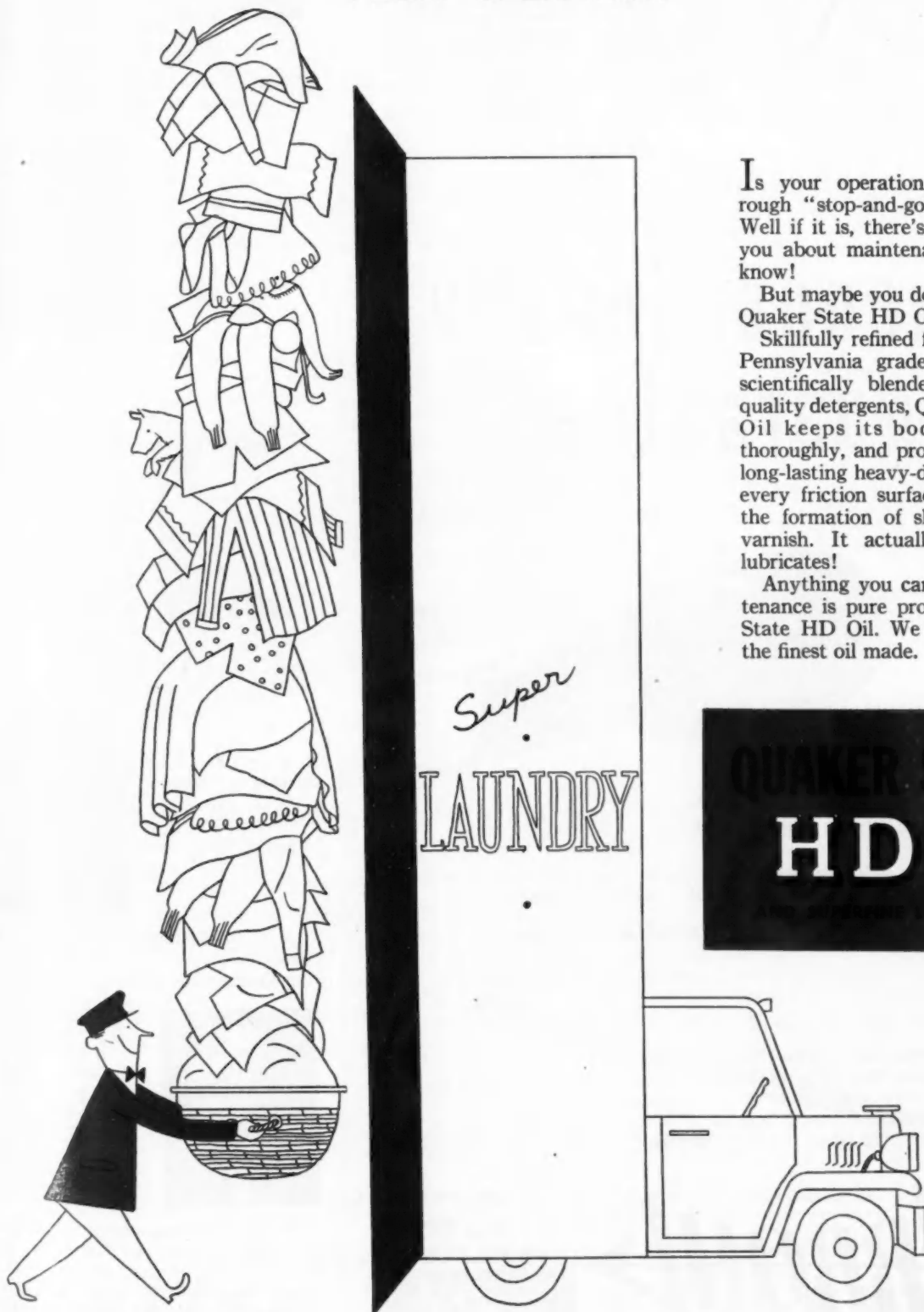
Hayes Freight Lines has a new terminal manager at Nashville, Tenn., in the person of Frank C. Harrington, a 15-year veteran of the transportation industry.

Associated Transport, Inc., has its Chattanooga, Tenn., operations in a new \$140,000 terminal at 3005 Ohls Ave. It is a red brick building with 17 loading doors, an apron on both sides of the 4500 sq ft dock. Paul A. Costin, district manager in Tennessee for AT, will be in charge with Robert Wyse and Richard Yearout as sales representatives.

North American Van Lines, Inc., Fort Wayne, Ind., has re-elected James D. Edgett as president.

Willet Co., Chicago, has received a leasing contract for 20 trucks from Gold Seal Inquors, Inc., one of the largest distributors in this field.

FINEST LUBRICATION FOR **ANY KIND** OF FLEET OPERATION



Is your operation one of those rough "stop-and-go" propositions? Well if it is, there's no need to tell you about maintenance costs. You know!

But maybe you don't know about Quaker State HD Oil.

Skillfully refined from 100% pure Pennsylvania grade crude oil and scientifically blended with highest quality detergents, Quaker State HD Oil keeps its body, lubricates thoroughly, and protects fully. This long-lasting heavy-duty oil cushions every friction surface and prevents the formation of sludge, gum and varnish. It actually cleans as it lubricates!

Anything you can save on maintenance is pure profit. Try Quaker State HD Oil. We believe it to be the finest oil made.



QUAKER STATE OIL REFINING CORPORATION, OIL CITY, PA:

COMMERCIAL CAR JOURNAL, May, 1952

151



INTRODUCING . . .

... **Stephen J. Tompkins**, assistant chief engineer of the truck design section, engineering division, Chrysler Corp.

... **George J. Finzel**, controller, Timken-Detroit Axle Co., succeeding Louis C. Haltug, who has been named assistant general manager of the Wisconsin Axle Div.

... **Merrill D. Stanley**, vice president, Muskegon Piston Ring Co.



... **Paul S. Lane**, named vice president Muskegon, Piston Ring Co.

... **Robert Carbary**, appointed assistant to the executive vice president, Holley Carburetor Co., succeeded as manager of truck sales by B. R. Talbert.

... **Frederick W. Parker, Jr.**, appointed executive vice president, Timken Detroit Axle Co., Detroit, Mich.



... **James A. Hall**, chief project engineer, Detroit Diesel Engine Div., General Motors Corp.



... **A. F. Siers**, sales manager of the motor coach division of Fageol Products Co., Kent, Ohio.

... **Thomas E. Wilder**, assistant advertising manager, Calumet & Hecla Consolidated Copper Co.

... **James A. Bardsley**, assistant to the vice president in charge of sales, Highway Trailer Co., Edgerton, Wis.



... **J. D. Bartholomew**, supervisor of the Toledobilt engine sales program, Toledo Steel Products Co.



... **Norman F. McCarthy**, elected vice president of Mack Mfg. Corp., and appointed director of purchases.

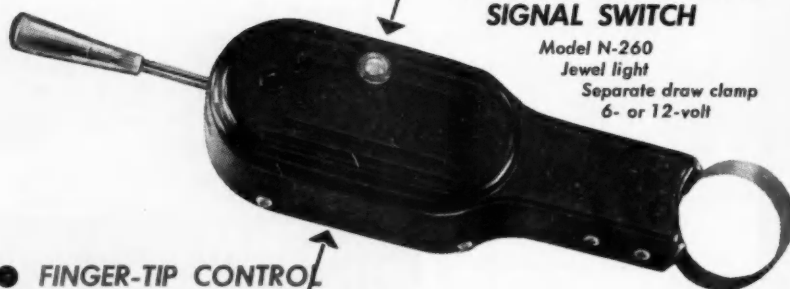
... **W. J. Sparling**, appointed vice president and manager at Milwaukee, and **M. G. Jewett**, manager of the Chain & Power Transmission Div.; **A. K. Thomas**, manager, Construction Machinery Div., Chain Belt Co., Milwaukee, Wis.

(TURN TO PAGE 154, PLEASE)

Unconditionally guaranteed

ARROW'S DIRECTIONAL SIGNAL SWITCH

Model N-260
Jewel light
Separate draw clamp
6- or 12-volt



- FINGER-TIP CONTROL
- BUILT-IN CIRCUIT PROTECTOR
- SIGNAL-WORKING INDICATOR

UNCONDITIONALLY GUARANTEED against defective workmanship. The Arrow N-260 Switch is designed to last the life of the vehicle.

BUILT-IN CIRCUIT PROTECTOR prevents a short circuit in the system from affecting the other lights of a vehicle.

SIGNAL WORKING INDICATOR. This feature alone makes the N-260 Switch invaluable. The jewel light indicates whether your directional signals are working. If one or more lamps is out,

or if there is a break in the lamp circuit, the jewel will fail to light.

ADJUSTABLE HANDLE can be moved in and out to provide finger-tip control for any size steering wheel.

The N-260 Switch can be used with any Arrow Directional Signals or with any system now in use. It is available in complete kits with the new Arrow Class "A" Signals that have the new Magnalume Lens.

ORDER NOW!



ARROW
SAFETY DEVICE COMPANY
MOUNT HOLLY, NEW JERSEY



USE DELCO BATTERIES



For finer performance at low cost, choose Delco—the Nation's No. 1 battery. Delco is designed for the long haul . . . ruggedly built to take it, and keep on taking it, in heavy-duty service. So—choose Delco for dependable, continuing low-cost-per-mile performance. Delco batteries are available everywhere.



DELCO BATTERIES

A GENERAL MOTORS PRODUCT  A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

UNITED MOTORS SERVICE

General Motors Building

Division of General Motors Corporation

Detroit 2, Michigan

Introducing ...

Continued from Page 152

...Paul W. Heasley, comptroller, as vice president and Lloyd R. Everhard as secretary-treasurer, Trailmobile Inc.

...Charles R. Crowder, first vice president of the Van Norman Co., Springfield, Mass.

...James A. Wheatley, Jr., sales manager, Grey-Rock Div., Raybestos-Manhattan, Inc., Manheim, Pa.

...W. S. Rigby, assistant manager of Automotive Original Equipment Sales Dept., Wagner Electric Corp., St. Louis, Mo.

...Louis C. Haltug, appointed assistant general manager of the Wisconsin Axle division of the Timken-Detroit Axle Co., Detroit, Mich.



...A. J. Willingham, Jr., district sales

representative for the southeastern states, McKay Co., Pittsburgh, Pa.

...Allan H. Wright, assistant controller, Reo Motors, Inc., Detroit.

...Garvin A. Drew, assistant vice-president of the Scovill Mfg. Co., in charge of the A. Schrader's Son Div., Brooklyn, N. Y.

...Harold A. Ranson, industrial relations director, Highway Trailer Co., Edgerton, Wis.

...Edmund T. Duffy, appointed national fleet and tractor manager of The Weatherhead Co., Cleveland, Ohio. He will be in charge of the company's heavy-duty hose and hose ends operations.

...L. C. McKessen, vice president in charge of sales of the Ansul Chemical Co., Marinette, Wis., elected president of the Fire Equipment Manufacturers Assn.



...W. E. Callahan, assistant regional manager for motor truck sales in the east and east-central regions, International Harvester Co.



...Ralph W. Doherty, sales manager of the replacement division of Wilkening Mfg. Co., Philadelphia, Pa.

...H. B. Reaves, Jr., as assistant traffic manager, Pittsburgh Plate Glass Co.

...Henry M. Kidd, vice president and sales manager, DeVilbiss Co., Toledo, Ohio.



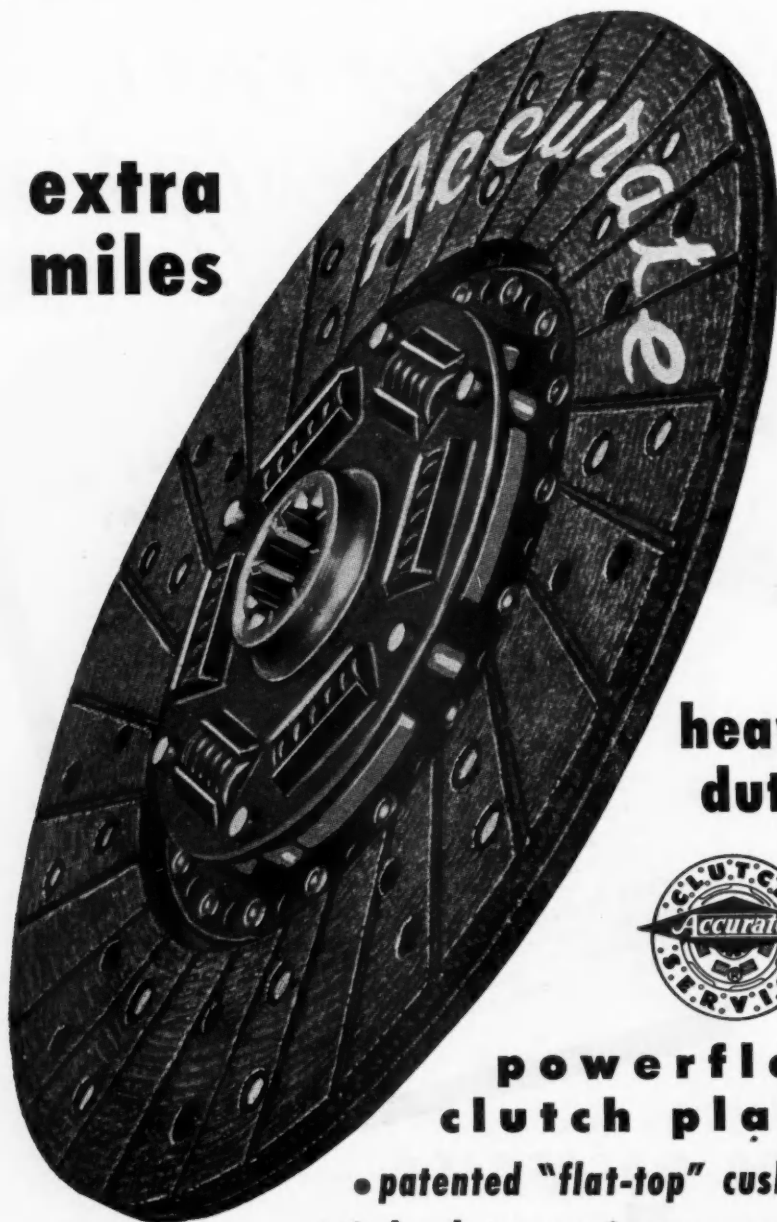
...Fred Matheis, Alvan Campbell, Jr., and Tharon J. Ellis, vice presidents of Thermoid Co., elected at a recent meeting of the board of directors.



...Wyman L. Henry, named manager of the Kansas City branch of The White Motor Co.

...Robert V. Merrick, appointed by Willys-Overland as assistant sales manager of Region 4, with headquarters in Kansas City, Mo.

extra miles



heavy duty



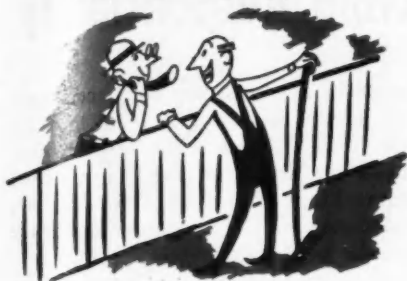
powerflex clutch plate

- patented "flat-top" cushion
- triple-duty spring supports
- exclusive self-aligning hub splines



Accurate PARTS MFG. CO. 12435 Euclid Avenue CLEVELAND 6, OHIO

LOCAL NEWS



Buffalo, N. Y.—Renewed efforts are being made to persuade the province of Ontario to lift a ban on the movement of trucks through Canada between Buffalo and Detroit. The Canadian route is about 110 miles shorter than the American route along Lake Erie.

Des Moines, Iowa—Recognition for outstanding driving and for service beyond the call of duty has been given Vance M. Vanek, driver for Mid-Continent Petroleum Corp., Waterloo, Iowa. His driving record is something like 13 years without an accident. He gave first aid at the scene of an accident and gave highway assistance to the victims stranded by the accident. He received the Iowa Trucking industry's "Driver of the Month."

New York, N. Y.—Carl H. Abraham, recent district supervisor for the Interstate Commerce Commission, Bureau of Motor Carriers, has set up a private practice as an ICC practitioner and traffic consultant. His offices are at 99 Lexington Ave.

Oklahoma City, Okla.—An order for a 14 per cent boost in rates for hauling livestock interstate in loads of 18,000 lb or more by Class B carriers was issued recently by the Oklahoma Corporation Commission. The original recommendation for a boost was for livestock loads over 8000 lb, but a farm group objected to this rate.

Madison, Wis.—A warning has been sounded that unless the states achieve a more uniform system of truck taxation and registration, reciprocity agreements on vehicle taxation will collapse. The warning was State Senator Frank Panzer. This was a part of the Senator's report to a legislative committee.

Stamford, Conn.—New emergency traffic and motor vehicle regulations have been posted by city police as alternate truck routes because of work on sewer construction.

York, Pa.—Driver Earl H. Bosserman was honored recently by receiving the Pennsylvania Motor Truck Assn. "Driver of the Year" award. His score was over a million miles of driving without an accident.

Harrisburg, Pa.—John C. Temple, formerly on the staff of the Interstate Commerce Commission has been appointed district supervisor for the Bureau of Motor Carriers in the Harrisburg area.

Atlanta, Ga.—Rate increases for motor freight transportation are in process before the Georgia Public Service Commission which call for a 10 per cent boost. The rate increase is challenged by a number of Georgia manufacturers.

Trenton, N. J.—Fred Cartledge, traffic manager, J. A. Roebling & Sons Co., was installed as president of the Trenton Traffic Club recently.

Philadelphia, Pa.—William H. Martin of Western Transportation Co., was elected president of the Traffic and Transportation Club of Philadelphia at its annual meeting.

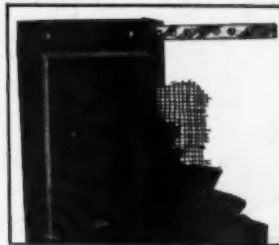
Atlanta, Ga.—B. B. Boggs, Jr., who is public relations director for Georgia Motor Trucking Associations, has been elected executive vice president. The vote by the board of directors was unanimous.

Miami, Fla.—A report received recently indicates that the Florida public utility anti-strike law, calling for compulsory arbitration of labor disputes in this classification, has been ruled unconstitutional by Circuit Judge Grady L. Crawford.



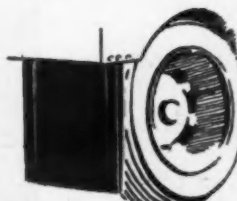
TRUCK FENDER FLAPS

TRUCKER ENGINEERED — LAST LONGER
Meet all state requirements — Used by leading fleets



14 gauge perforated steel strip molded into top as anchor bar • Rubber, molded through perforations, bonds steel securely in place, can't slip • All flaps molded of quality rubber, impregnated with chopped tire cord • Optionally available with reinforcing sheet of strong fabric between layers of rubber, full length and width.

Note the tapered design, illustrated in cross-section, side view. Tapering distributes flexing action and prolongs life of flaps. Tapered reinforcement rib, top and sides, gives maximum "wind bend" resistance. Bottom has "slip edge"—no rib to hold mud or ice.



At Better Distributors Everywhere

ACE RUBBER PRODUCTS, INC.

100 Beech Street

Akron 8, Ohio

CCJ LEGAL CORNER



Control Over Leased Trucks Must Be Limited to Avoid Responsibility

It is fairly common practice today to lease trucks instead of owning your own fleet. There are many advantages to such a procedure; it is necessary to pay only for trucks used, maintenance and storage are not problems, risk of

accident law suits can be placed upon the lessor; however, in order to place the legal responsibility for the fleet upon the lessor he must have actual control over the trucks. If he does not, the lessee may be as responsible for the trucks as if they were his own.

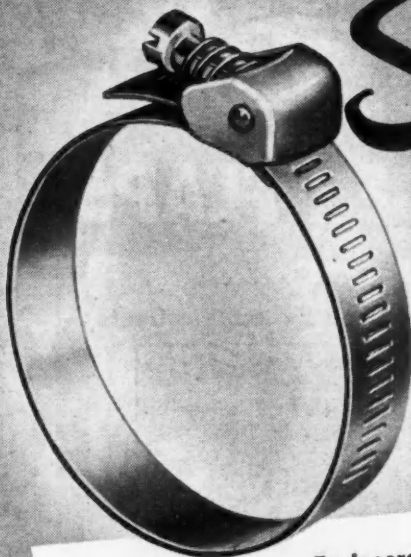
Shapiro Fisheries use leased trucks. They control all the operations of the trucks, have their name painted on the side, the drivers take orders from Shapiro and are paid by them. One of these leased trucks was in an accident in Cincinnati; and the injured parties sued Shapiro.

Shapiro claimed that the lawsuit should be against the owner of the truck and made a motion to dismiss the suit. As Shapiro is an Illinois corporation and the accident being in Ohio, the only way to begin the lawsuit was by serving papers on the owner of the vehicle through the Ohio Secretary of State. The notice was given to the Illinois Secretary of State but he sent it to Shapiro, who was not the owner of the truck involved. Therefore, Shapiro's lawyer claimed that the case was begun improperly and that they could not be sued.

The judge decided against Shapiro. He said that when a truck is leased and the lessee has exclusive control over its operation he is as responsible as if he owned the vehicle outright. If a shipper wants to avoid responsibility he must either use a common carrier or a contract carrier. He can do nothing more than have his load ready, load it, and give orders as to where it is to go. He must not put his own name on the truck, insist upon being the only person to use that truck, or treat the driver as an employee.

In other words: you can't have your truck fleet and not have it, too.

What made



Snaplock

the worm drive
hose clamp leader
SO FAST?

TOP QUALITY — Engineered to aircraft specifications
...Stainless Steel band — Stainless Steel housing

TOP EXPERIENCE — Made by the oldest and the largest
manufacturer of hose clamps

TOP ACCEPTANCE — Sales upped 500% in one year ...
now the choice of leading distributors throughout the country

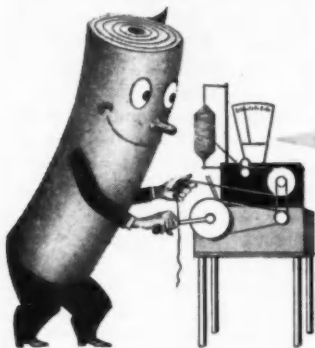
"MAKE IDEAL YOUR SINGLE SOURCE FOR ALL HOSE CLAMPS"

*performance
guaranteed
since 1913*

ideal
Corporation
BROOKLYN 7, N.Y.



**"You may get up now, Smedley, the
brakes are fixed."**



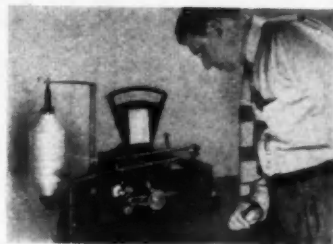
UNIFORMITY

*Makes the Big Difference
In TRUCK COVER Fabrics*



Gives You Greater Fabric Uniformity

Checking evenness
of roving with Belger
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throughout production to assure uniformity
in all Mt. Vernon-Woodberry products.



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BENNETT FLEETMETER

- ACCURATE INVENTORY CONTROL
- ELIMINATION OF ERRORS
- FASTER REFUELING
- REDUCED MAINTENANCE COSTS
- SAVING IN MAN-HOURS*



Gasoline Pumps

offer these five* features—and more, because they are especially designed for rugged fleet fueling jobs . . . not a miniature but a full-sized gasoline pump engineered for the fleet operator.

Write for full details

JOHN WOOD COMPANY

Bennett Pump Division
MUSKEGON, MICHIGAN

Offices in Principal Cities

Taxation of the Trucking Industry, by Richard W. Lindholm, Ph.D.; Bureau of Business Research, College of Commerce and Administration, Ohio State University. This is a study of taxation as it is applied to operators of commercial motor vehicles. It enters basic tax theories, elements of highway finance and discusses in general various phases of highway use taxes.

Covering a base period 1945 and 1946, the study continues with a discussion of what truckers think of the various taxes applied to them, developed tax by tax. Of particular note are the opinions expressed on gasoline tax which generally carried through all of the various forms of trucking taxation. They were: (1) that the state gasoline tax was a fairly equitable method of assessment for the cost of the state highway system, and (2) that there is little reason for a high tax on gasoline unless the collections are used for construction and maintenance of highways used by truckers.

In general, this is a fine addition to written material now available on basic trucking industry problems. The book is carefully documented and has a complete statistical appendix.

Ball bearings for various parts of 1952 model passenger cars and trucks are listed in Form 378-50-3 S, a supplement, now available from Marlin-Rockwell Corp., Jamestown, N. Y. The list is by make and model, giving the M-R-C bearing number for each application.

Jacks and rams for automotive and general machine shop use are described in a new catalog by Hein-Werner Corp., Waukesha, Wisc. The new catalog gives descriptions of the new line of jacks which the manufacturer has completed and various attachments for these jack and ram sets.

Steam generators, their principles of operation, installation and recommended adaptations are given in a brochure published by Clayton Mfg. Co., El Monte, Calif. The generators described are of the stationary, forced recirculation type that will produce live steam within five minutes from a cold start, with rated horsepower from 10 to 100.

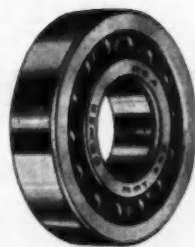
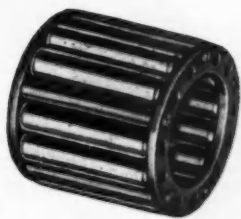
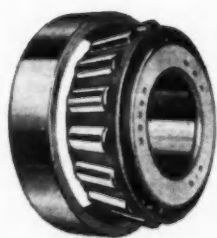
Tire supplies, of every description, including repair materials, replacement valves, tools, service equipment, vulcanizing and recapping supplies are listed in a general catalog released by Myer's Tire Supply Co., Akron, Ohio. The catalog has 50 pages, illustrated, complete with retail and jobber prices.

Broadsides, or large descriptive folders which open flat have been printed by Towmotor Corp., Cleveland, Ohio, describing their fork lift trucks from three distinct approaches. One tells how fork lift trucks are designed, suitable for inquiries by engineers. The other tells how use of fork lifts will save money in materials handling and operate over long periods with a minimum maintenance. This, Towmotor has written to the purchasing agent or executive. A third gives a breakdown of the mechanical features, lubrication guide, etc.

(TURN TO PAGE 162, PLEASE)

Bower's

your best bet!



QUALITY • ACCURACY • SERVICE

TAPERED AND STRAIGHT ROLLER BEARINGS

Bower and Federal-Mogul have combined their efforts to provide you with the finest roller bearing service available anywhere . . . *finest* in

quality and accuracy . . . *finest* in prompt availability to you. And you get *both* tapered and straight roller bearings in the Bower line!

***Ask your Federal-Mogul Jobber . . .
he's famous for service***

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DETROIT 13, MICHIGAN



Fleetman's Library—Continued

Mobile radio equipment and its use for materials handling in a garage, warehouse or freight dock has been outlined in a brochure just issued by RCA. The pamphlet describes how the use of a 2-way mobile system will provide more efficient operation of materials handling equipment by permitting a dispatcher or an executive to give orders to the operators regardless of where they may be working. For your copy, write for MC-1752, Mobile Commu-

nications Section, Radio Corporation of America, Camden 2, N. J.

Lube oils, greases and waxes made by M. W. Kellogg Co., Jersey City, N. J., are presented in a technical bulletin just released. The chemical composition and recommended use for the various Kel-F products are discussed.

Cranes, hoists, material elevators, and a complete line of related machinery are described in a general catalog available

from American Hoist & Derrick Co., St. Paul, Minn. The catalog pictures the entire American line, with post card provision to obtain information on a particular unit or combination.

A reprint of an article "Zinc Die Cast Can Be Welded" is available from Eutectic Welding Alloys Corp., Flushing, N. Y. The article shows how Kirksite dies and other zinc die castings can be welded without melting the parent metal.

Modern Arc Welding is the title of a new book published by the Hobart Trade School, Troy, Ohio, which is a comprehensive text on the procedure and practice of arc welding. It is of value to the student, the practicing engineer, welding operator and designer. The book contains over 600 photographs, operations, diagrams and charts. It is available from the publisher for \$3.00.

Automotive service equipment made by the United States Air Compressor Co., Cleveland, Ohio, is listed in a 64-page catalog, divided into four indexed sections showing air compressors, hydraulic lifts, lubricating equipment and pneumatic accessories.

Steam cleaning for profit is the subject of a booklet, now available from Homestead Valve Mfg. Co., Coraopolis, Pa., manufacturers of Hypressure Jenny steam cleaner. While the commercial aspects of the book may not directly apply to the fleet operator, the booklet does give an outline of work which the Jenny will do and a listing of the various models, specifications, etc.

Arc Welding Accessories is the title of a four-page bulletin prepared by General Electric Co., Schenectady, N. Y. It covers the holders, ground clamps and connectors made by GE, tells of their uses, operation, and specifications.

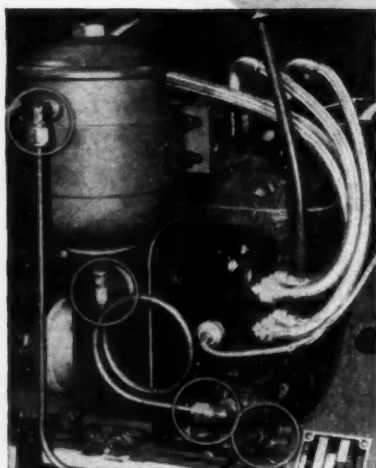
Solderless terminal catalog has been announced by Vaco Products Co., Chicago, containing about 35 different types of solderless terminals, connectors, crimping tools, etc., made by the company.

The Dependable Diesel published by Cummins Engine Co., Inc., Columbus, Ind. It is devoted entirely to feature-type stories of various applications of diesel power, both stationary and automotive. It covers the wide range of uses to which diesel power has been put.

Transmission Topics is the title of a new external house organ designed to cover the users of heavy-duty transmissions—industrial, highway, and off-highway. The magazine is published by the Fuller Mfg. Co., and it contains on-the-job illustrations of a number of Fuller applications in the fields of heavy-hauling, contracting, logging, petroleum, mining and others. There are feature articles and news items of interest to the fleet operator. Copies are available from the Fuller Mfg. Co., Kalamazoo, Mich.

Fuse size and price sheet has been published by Littlefuse, Inc., Des Plaines, Ill. By matching a blown fuse to the illustration the service man can determine the type of fuse needed. A companion sheet gives the prices of the various assortments and kits and mountings available from Littlefuse.

Why take chances on tubing connections? use **IMPERIAL FLEX FITTINGS** and be sure!



Flex Fittings, circled on this engine, are easy to install . . . simply slip nut and flex sleeve over tubing . . . insert tubing into body as far as it will go and tighten nut—that's all.



Ask for Catalog No. 344

THE IMPERIAL BRASS MFG. CO. 1209 W. Harrison St., Chicago 7, Ill.
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Brass Fittings • Flexible Lines
Shot-Off Valves • Barrel Faucets
Tube Working Tools • Service Aids



This Elastic Sleeve in Flex Fittings Absorbs Vibration and Shock . . . permits tubing to flex and at the same time assures a positive pressure-tight seal on all kinds of tubing.

Flex Fittings make joints virtually indestructible by VIBRATION . . . withstand SHOCK and MINOR TUBE MOVEMENT . . . without failure or leakage.

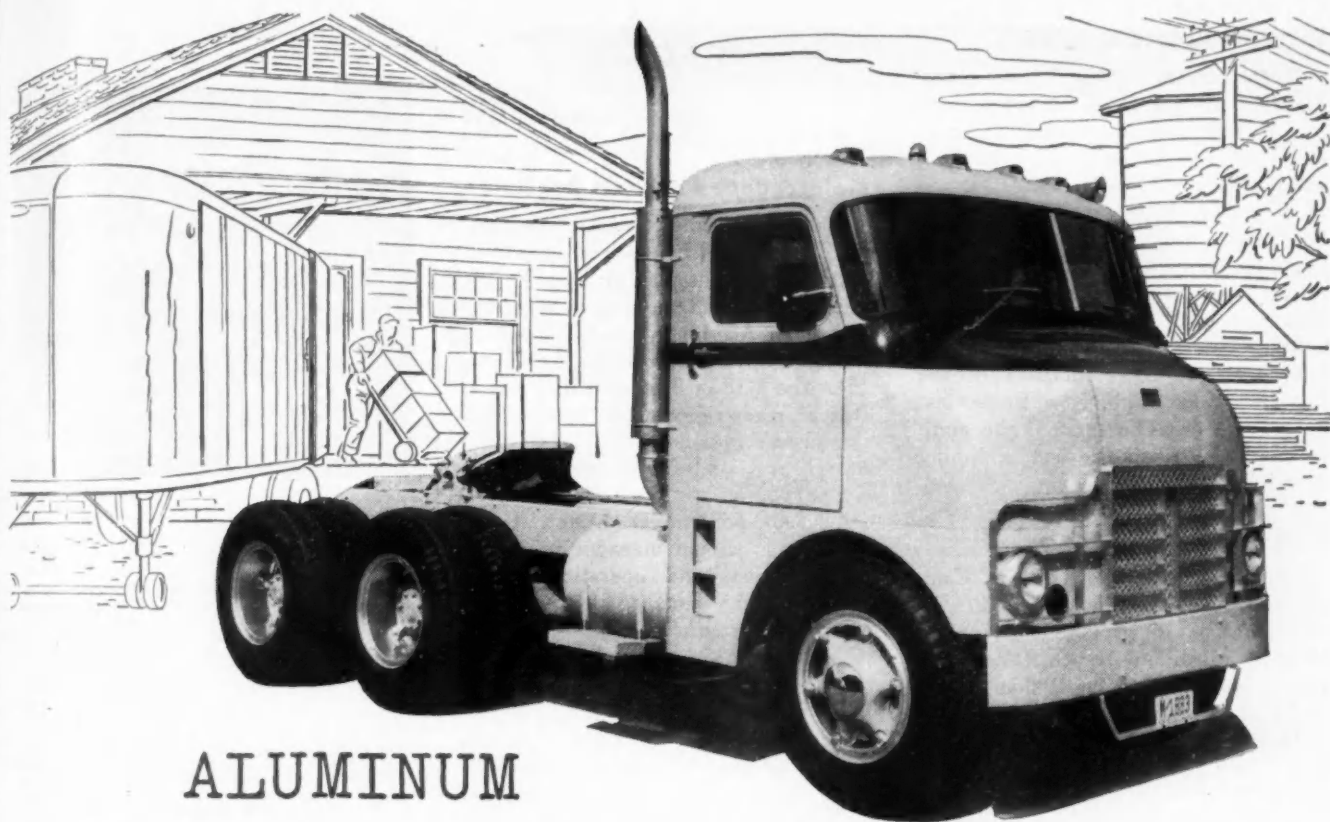
They may cost a few pennies more than ordinary fittings . . . but by providing assurance against breakdown and the need for replacements due to vibration . . . they effect really important economies over the long run. In many cases they make the use of flexible lines unnecessary.

For all around safety and economy standardize on Imperial Flex Fittings now!

JOE FLEXUM says, . . .

"See the Flex Fitting at the Automotive Shows". . .





ALUMINUM adds 2300 lbs. extra payload to new Brown COE tandem tractor!

Brown Equipment & Manufacturing Company studied the experiences of the nation's largest fleet operators when they began building trucks and tractors. They decided to design the lightest units possible, so Brown customers would realize the maximum return on their investment.

With Alcoa's assistance, Brown designed and built their first tractor using Alcoa Aluminum in fifteen major structural members. The results were so satisfactory that Brown has continued to increase the payload of their units by converting more and more components to aluminum.

Brown's latest design, Model LS, has over thirty aluminum parts. Totaling 2,140 pounds, they save more than

their own weight in this heavy-duty, cab-over-engine tandem tractor.

The use of Alcoa Aluminum by Brown and other leading truck and trailer manufacturers helps operators meet rising operating costs with:

- **more payload** because aluminum cuts dead weight.
- **lower maintenance** because aluminum resists corrosion, simplifies repairs.
- **longer equipment life** because aluminum allows the use of thicker, stronger, longer-lasting sections.

Ask your builder about the aluminum options he offers next time you order new equipment. Or call your Alcoa Sales Engineer for help in planning for a lighter, more profitable fleet.



ALCOA'S FREE BOOKLET

36 pages of "Payload Proof" is yours for the asking. Write: ALUMINUM COMPANY OF AMERICA, 1876-E Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA

First in Aluminum

The Metal that LASTS



NOW 6:30 P.M. EDT every Sunday—"SEE IT NOW" with Edward R. Murrow... brings the world to your armchair... CBS Television.

Shipping Losses Decried

Over \$100 million of goods manufactured by American industry which is lost and damaged during shipment could be saved in a year if the nation's shippers, carriers and receivers joined in a united effort to stamp out this economic waste. The statement was made by Henry H. Pratt, general traffic manager of Crucible Steel Co. of America:

Mr. Pratt spoke before 350 traffic and transport representatives of the Raritan Traffic Club, New Brunswick, N. J. The occasion marked the anniversary of "April Perfect Shipping Month."

Rate Increase Postponed

Ohio's State Public Utilities Commission postponed until June 27 the effective date of proposed higher intrastate rates on less-than-truckload freight shipments for more than 200 of the state's largest trucking firms.

The PUC also ordered a hearing for May 13 to determine if such rates are fair or legal.

In petitioning for the increased rates, the truckers said such action was necessary to offset wage increases recently granted by Ohio over-the-road carriers following a brief strike.

CCJ News Reports

Continued from Page 116

Maintenance Program Revised

An "airline maintenance program" has been applied to fleet operations with the appointment of John Stevenson, former maintenance superintendent at United Air Lines, Denver, Colo., to a similar position with R. B. Wilson, Inc. The Wilson fleet, operating out of Denver, made the announcement of Mr. Stevenson's appointment as part of an overall revision of operations.

The operations department will be piloted by William G. Lyster. G. O. Miller was named manager in charge of equipment and operations. John Evans is to be manager of driving and terminals personnel.

Illinois License is Legal

Constitutionality of 1951 Illinois legislation sharply increasing truck license fees was upheld by the State Supreme Court. With the added revenue dedicated to highway improvements, the law provides for a \$20,000,000 boost beginning in 1954. The State (TURN TO PAGE 210, PLEASE)



YOUR TRUCKS are your SALESMEN!

Keep Them Clean
with Economical
Magnus Cleaners

Man-power's the expensive factor in washing truck and bus bodies. Suit the cleaner you use to the kind of dirt you have to take off . . . and the frequency with which you wash . . . and you can cut plenty off the bill.

Pick the Cleaner That Fits Your Needs

Magnus Cleaners for washing truck and bus bodies are designed to fit the nature of the cleaning job and the cleaning schedule on which you operate. **For Very Oily Dirt**—Spray on Magnusol solution. Rinse off. That's all! **For Normal Dirt**—Brush or sponge on Magnus 55-P. Rinse. No chamoising. **For Frequently Cleaned or Light-Colored Bodies**—Brush or sponge on Magnus Carfoam. Rinse off. No chamoising.

Safe . . . Fast . . . Economical

Each of these Magnus Cleaners is safe for any good paint. Each needs a minimum of man-power. Each will give you clean bodies at the lowest possible cost. See pages 37 to 43 of the Magnus Truck and Bus Cleaning Manual for the complete story. Write for a copy of the latest edition.

MAGNUS CHEMICAL COMPANY, 38 South Avenue,
Garwood, N. J. In Canada—Magnus Chemicals, Ltd.,
Montreal. Service representatives in principal cities.



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CLEANERS • EQUIPMENT • METHODS

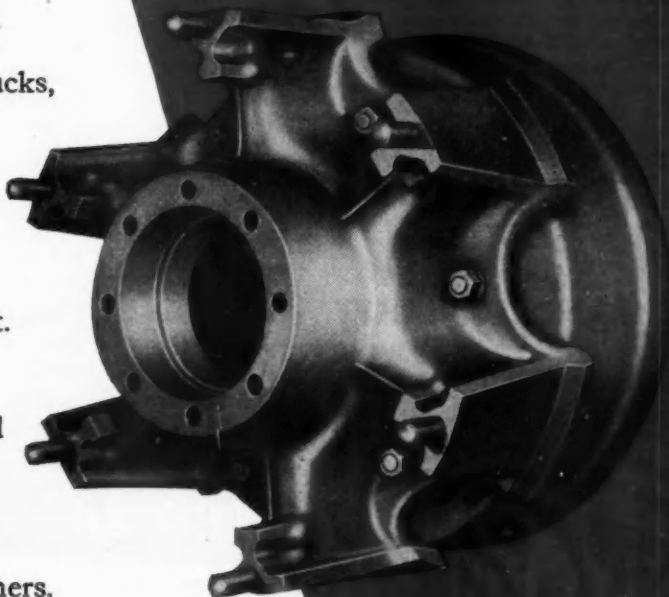
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ARE DISTRIBUTED
THROUGH NATIONAL
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ATLANTA, Ga.....Harris Automotive Service, Inc.
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BIRMINGHAM, Ala.....Cruse-Crawford Wheel & Rim Co.
BOSTON, Mass.....Harvey Sales & Service Company
BOSTON, Mass.....New England Wheel & Rim Company
BUFFALO, N. Y.....Frey, The Wheelman, Inc.
CALGARY, Alta., Canada.....Fisk Tire Service, Ltd.
CHARLOTTE, N. C.....Carolina Rim & Wheel Company
CHICAGO, Ill.....Stone Wheel, Incorporated
CINCINNATI, Ohio.....Rim & Wheel Service, Inc.
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CUMBERLAND, Md.....R. W. Norris & Sons
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DAYTON, Ohio.....Stone Wheel, Incorporated
DAYTON, Ohio.....Rim & Wheel Service, Inc.
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DENVER, Colo.....Quinn & McGill Motor Supply
DETROIT, Mich.....H. & H. Wheel Service, Inc.
DETROIT, Mich.....Rim & Wheel Service Company
DOVER, Del.....R. W. Norris & Sons
EDMONTON, Can.....Alberta Wheel Distributors, Ltd.
EVANSVILLE, Ind.....Auto Wheel & Rim Service
FARGO, N. D.....Pioneer Rim & Wheel Company
FARGO, N. D.....Wheel Service Company
FORT WAYNE, Ind.....Wheel & Rim Sales Company
GRAND RAPIDS, Mich.....Rim & Wheel Service Co.
HAGERSTOWN, Md.....R. W. Norris & Sons
HARRISBURG, Pa.....Standard Wheel & Rim Co.
HARRISONBURG, Va.....Harrisonburg Wheel & Parts, Inc.
HARTFORD, Conn.....Connecticut Wheel & Rim Co.
HOUSTON, Texas.....Southwest Wheel & Equipment Co.
INDIANAPOLIS, Ind.....Indiana Wheel & Rim Co.
JACKSONVILLE, Fla.....Southeast Wheel & Rim Co.
KANSAS CITY, Mo.....Borbein, Young & Company
KNOXVILLE, Tenn.....Harris Automotive Service, Inc.
LOS ANGELES, Calif.....Motor Rim & Wheel Service of Calif.
LOUISVILLE, Ky.....Auto Wheel & Rim Service
MEMPHIS, Tenn.....Beller Wheel, Brake & Supply Co.
MILWAUKEE, Wis.....Stone Manufacturing Company
MINNEAPOLIS, Minn.....Pioneer Rim & Wheel Co.
MONTREAL, Can.....General Automobile Equip., Ltd.
NASHVILLE, Tenn.....Beller Wheel, Brake & Supply Co.
NEWARK, N. J.....Wheels Incorporated
NEW HAVEN, Conn.....Connecticut Wheel & Rim Co.
NEW ORLEANS, La.....Southern Wheel & Rim Service
NEW YORK, N. Y.....Wheels Incorporated
OKLAHOMA CITY, Okla.....Southwest Wheel, Inc.
OMAHA, Nebr.....Morgan Wheel & Equipment Co.
OMAHA, Nebr.....Omaha Rim & Wheel Company
PEORIA, Ill.....Peoria Wheel & Rim Company
PHILADELPHIA, Pa.....Kay Wheel Sales Company
PHILADELPHIA, Pa.....Thomas Wheel & Rim Co., Inc.
PITTSBURGH, Pa.....Wheel & Rim Sales Company
PORTLAND, Oregon.....Auto Wheel Service
PORTLAND, Oregon.....Six Robbles, Incorporated
PROVIDENCE, R. I.....New England Wheel & Rim Co.
RALEIGH, N. C.....Carolina Rim & Wheel Company
RICHMOND, Va.....Dixie Wheel & Rim Company
ROCHESTER, N. Y.....Frey, The Wheelman, Inc.
ST. LOUIS, Mo.....Borbein, Young & Company
ST. PAUL, Minn.....Wheel Service Company
SALISBURY, Md.....R. W. Norris & Sons
SALT LAKE CITY, Utah.....Henderson Wheel, Rim Serv.
SAN ANTONIO, Texas.....Southwest Wheel & Equip. Co.
SAN FRANCISCO, Calif.....Motor Rim & Wheel Serv. of Calif.
SEATTLE, Wash.....Six Robbles, Incorporated
SOUTH BEND, Ind.....Wire & Disc Wheel Sales Co.
SOUTH HILLS, Va.....South Hills Wheel & Parts, Inc.
SPOKANE, Wash.....Bearing & Rim Supply Company
SPRINGFIELD, Ill.....Illinois Wheel & Brake Company
SPRINGFIELD, Mo.....Borbein, Young & Company
SYRACUSE, N. Y.....Colbourn Wheel & Rim Company
TACOMA, Wash.....Six Robbles, Incorporated
TOLEDO, Ohio.....Wheel & Rim Sales Company
TORONTO, Canada.....Harpham Brothers, Ltd.
TORONTO, Canada.....Wheel & Rim Co. of Canada, Ltd.
VANCOUVER, B. C., Canada.....Wheel & Equip., Ltd.
WICHITA, Kansas.....Borbein, Young & Company
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Leading Truck, Trailer and Trolley Coaches Ride on **DAYTON WHEELS**

The greatest compliment that can be paid to Dayton Spoke-Type Cast Steel Wheels is to have them selected, and used as original equipment, by the leading manufacturers of trucks, trailers and trolley coaches.

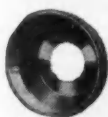
The engineering departments of these manufacturers are satisfied with nothing but the best. They *must* be certain that the wheels they use will give the kind of performance over the years and under all conditions that will please their most exacting customers.



THE DAYTON STEEL FOUNDRY COMPANY, DAYTON 1, OHIO

Dayton

**SPOKE-TYPE
CAST STEEL
WHEELS**



**DAYTON
ALLOY IRON
BRAKE DRUMS**



**DAYTON
FIFTH
WHEELS**



**DAYTON
VERTICAL
LANDING GEARS**



Fits Pins on 34 Car and Truck Models

One Dual Spiral Expansion Reamer does the work of five ordinary reamers! Its greater expansion range saves you money. Model 85 AS Dual Spiral Expansion Reamer plus 3 extra sets of blades fits piston pins and king bolts in 34 car and truck models. Chrome steel blades can be resharpened several times. Mandrel is in 100% contact against the entire length of blade, at every expansion range. No flexing or springing—no bell mouthing. Exclusive dual spiral action cuts and burnishes in single operation.

Write for Reamer Bulletin, Lempco Products, Inc., 5490 Dunham Road, Bedford, Ohio

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The fastest growing idea in the auto repair business today!

HYGRADE

Fingertip System

of CARBURETOR REBUILDING

HYGRADE
LONG ISLAND CITY 1, N. Y.

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FOR HEAVY DUTY

WOLF'S HEAD

MOTOR OIL AND LUBES

100% PURE PENNSYLVANIA

Member,
Penns. Grade Crude Oil
Association

CCJ News Reports

Continued from Page 208

Highway Division figured on the extra revenue in laying out a \$100,000,000 road improvement program for this year.

The high state court reversed a ruling made last November by Circuit Judge Clem Smith, who held the 1951 act unconstitutional and enjoined state officials from collecting the increased fees pending a final decision by the State Supreme Court. Under the new license schedule, increases range from \$20 to \$1,139 this year and next, and \$26 to \$1,593 starting in 1954. The former range, also based on weight classifications, was \$12 to \$425.

PM Conference Scheduled

The College of Engineering of the University of Washington will hold a conference June 5-7 on motor vehicle preventive maintenance and failure analysis. This is to be in cooperation with the Seattle chapter, National Association of Fleet Supervisors. Attendance is expected from British Columbia, Oregon, Idaho and Washington.

As stated in a preliminary announcement, "The purpose of the conference is to help reduce operating costs through an exchange of operating and maintenance ideas. Registration is \$20 and applications are available from Prof. Fred H. Rhodes, Jr., conference director, Civil Engineering Dept., University of Washington, Seattle 5, Wash. (TURN TO PAGE 212, PLEASE)

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- THEY'RE MADE IN WOHLERT FACTORIES BY PRECISION TRAINED WORKMEN
- THERE ARE HUNDREDS OF SUCCESSFUL PARTS IN THE WOHLERT LINE
- EVERY WOHLERT PART IS ENGINEERED AND PLAINLY IDENTIFIED

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For all cars, trucks, buses, and industrial engines.

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GUARANTEED SERVICE

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Send in your old units

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Write for DH-33

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**FOR EACH MAKE
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You're always right when you specify Hastings Sets. They're Motor Engineered to give you the right combination of rings for any engine.

Millions of installations—and service under all operating conditions—prove that Hastings meets the specific replacement requirements of each individual engine.



Motor Engineering gives you specific ring types and ring combinations for specific engines. There's no guess-work, no confusion.

Right for re-bore, re-ring and re-sleeve. The famous Steel-Vent, basic oil control ring in Motor Engineered Sets, is engineered exclusively for replacement service and for all replacement conditions.

Motor Engineering gives you the right answer in chrome. All Hastings heavy-duty sets are chrome-faced sets. Hastings gives you coverage in passenger car chrome sets, also.



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TOUGH on oil-pumping • **GENTLE** on cylinder walls

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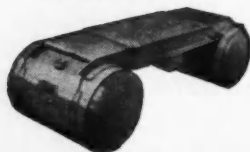


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SNYDER SAFETY TANKS

All three Snyder Safety Tanks pictured here embody all the safety features that assure the utmost safety for the fleet operator, driver and cargo. Snyder "Balanced Construction" design, insures lighter weight, streamlined yet stronger tanks...

Tanks built to stand heavy loads, high speeds and the shock of the road. The Snyder safety diesel tank has all the safety and construction features of the gasoline tank and is equipped with larger outlets to accommodate the heavier fuel lines.

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ALL LIQUID OR GASEOUS FUELS

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**It Pays To
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*Over a Century of
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CCJ News Reports

Continued from Page 210

U. S. Chamber Testifies

Appearing before the Senate Interstate and Foreign Commerce Committee, Earl B. Smith, vice president and director of traffic for General Mills, Inc., made clear the Chamber's position relative to bills now under consideration which effect the trucking industry.

Mr. Smith told the Committee that the Chamber opposes passage of Senate Bill 2349, which proposes to extend the long-and-short-haul clause to motor carriers. He said, "This opposition is based on the Chamber's position that transport carriers should be regulated only to the degree clearly required by public interest."

The Chamber is also opposed to Senate Bill 2363, which proposes "maximum dimensions and weights for motor vehicles subject to Part II of the Interstate Commerce Act, unless specifically exempted by the Interstate Commerce Commission. The Chamber feels that it would be improper for the federal government to dictate to state governments as to the size and weight of vehicles they should permit to operate over their state highways.

END

Please Resume Reading Page 37

**FRINK
SNO-PLOWS**

Both "V" TYPE and
ONE WAY BLADE TYPE
hand or power hydraulic control
FOR ALL MOTOR TRUCKS
FROM 1½ to 10 TONS

FRINK SNO-PLOWS, INC., CLAYTON, 1000 1st., N.Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. Ltd., TORONTO, ONT.



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**HEAVY DUTY
MOTOR TRUCKS**

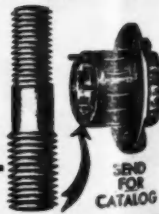
**GASOLINE ELECTRIC
GENERATING SETS**

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TRUCK COMPANY
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**OVERSIZE AND STANDARD
REAR
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for all Trucks
ORDER FROM YOUR JOBBER



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